What's Wrong With Railroad TV? p. 11

January 9, 1961

RAILWAY AGE *weekly*

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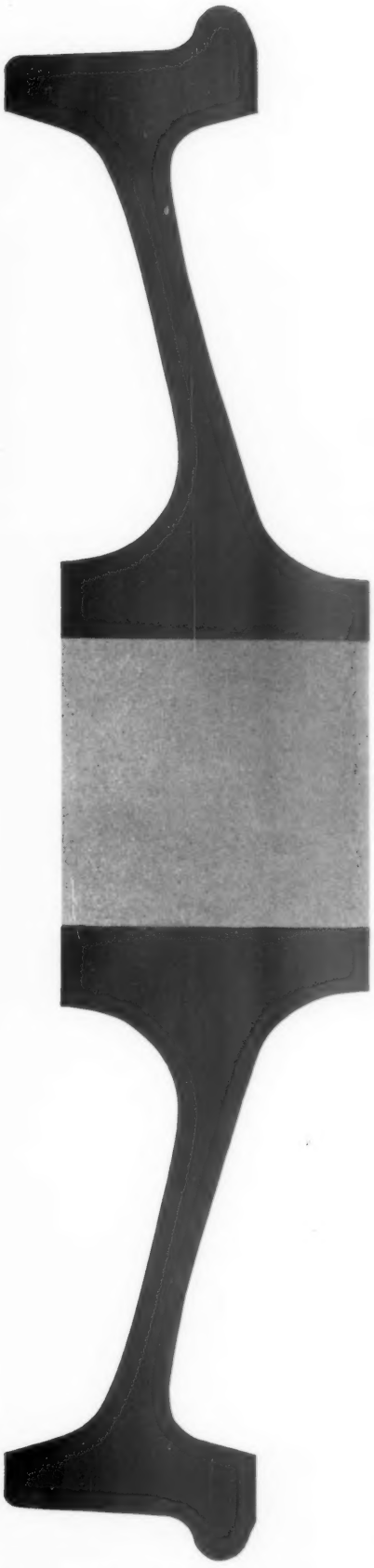

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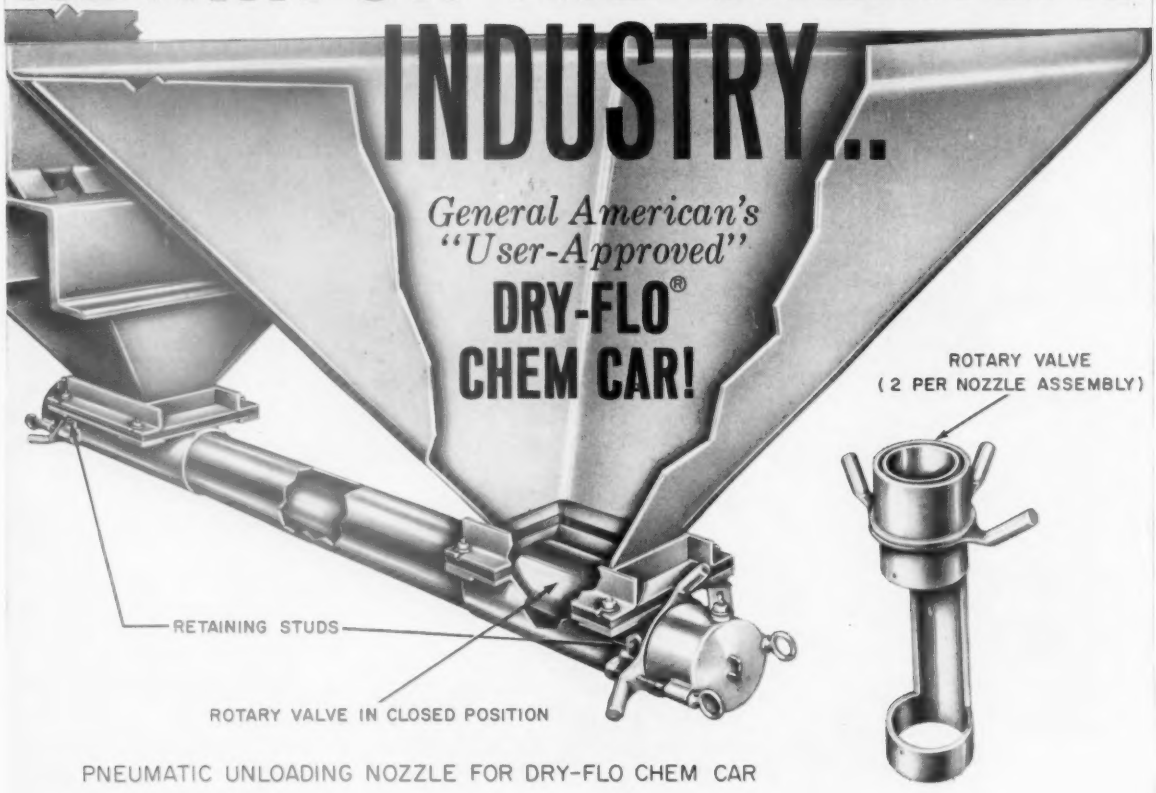

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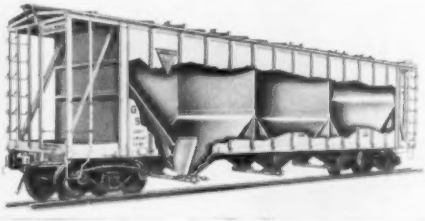

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RAILWAY AGE *weekly* January 9, 1961 • Vol. 150, No. 2

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Doyle asks transport changes ..... p. 7

The Senate Interstate Commerce Committee's study group under the direction of Gen. John P. Doyle proposes major overhaul of transportation legislation, regulation and policy. Two changes proposed: a Federal Transportation Commission for economic regulation of all transport and a Department of Transportation to supervise all other government activities in transportation.

Cover Story—What's wrong with railroad TV? p.11

Television hasn't scored the important breakthroughs in the railroad industry that were predicted a few years ago. Here are some of the reasons, as turned up by recent conversations with railroad communications officers.

Cover Story—Radio can save you time and money p.14

Radio is fast emerging as an important competitive tool of the railroads. It is used to help speed train movements, to plan meets and passes, and to increase the productivity of maintenance-of-way forces.

PRR plans for a traffic upturn p.18

Freight carloadings are expected by most observers to start moving up around mid-1961. The Pennsylvania has prepared for the prospective business by assigning high priority to a freight-car rehabilitation project.

Research opens way to bigger metal culverts p.22

An Armco project has led to development of a new method of designing corrugated metal culverts. The new concept is called the ring compression method. A giant structure recently installed by the L&N was designed according to the new method.

Cover Story—How the 'Q' boosts its passenger revenues p.26

The road's passenger revenue figure last year set a post-war record. Intensified promotion of the "romance, glamor and prestige" of rail travel is paying off handsomely for the Burlington as well as other railroads.

GN files to support ATSF on WP p.32

Great Northern has petitioned the ICC for leave to intervene in pending applications to control Western Pacific. GN supports Santa Fe's, opposes Southern Pacific's application.

The Action Page—Top opportunity, top responsibility p.38

The President's commission to study and report on railroad working rules has been given a rare privilege. It can make history for railroads and their employees, and for America's welfare, in the form of a revived and prospering railroad industry.

Week at a Glance cont.

Short and Significant

New Haven is getting $3.5 million . . .

of the $4.5 million loan it asked the government to guarantee (RA, Jan. 2, p. 6). ICC says this sum, plus $4.5 million approved in November, should be enough to meet obligations through March, when "substantial benefits" may be expected from state and municipal aid.

A new Univac "Solid State" computer system . . .

has gone into operation on the Boston & Maine. Arranged to provide data for all departments, the high-speed computer prints 600 130-character lines per minute. In car accounting, for example, it condenses a 17-step process to eight steps.

Chesapeake & Ohio has added two Railvans . . .

to its Detroit-Grand Rapids-Muskegon rail-highway mail and express service, making a total of 8 units. The convertible rail-highway trailer units have piled up over 700,000 miles of service, with better than 99% availability, C&O says.

Canada's Great Slave Lake rail line . . .

apparently will be built from the Peace River area of British Columbia rather than on an alternative eastern route (RA, Mar. 14, 1960, p. 72). Transport Minister Balcer told the House of Commons that $250,000 had been budgeted to survey the western (Grimshaw) route.

Chicago Express, an eastern and midwestern trucking firm . . .

with headquarters at Kearny, N. J., reportedly has been sold to a group headed by J. L. S. Snead. Formerly Consolidated Freightways president, Mr. Snead has been a strong backer of coordinated truck and rail transportation.

First regularly scheduled all-piggyback train . . .

between the South and the East was put into service by ACL Jan. 7. The train, operated in cooperation with FEC, RF&P and PRR, originates at Lakeland, Fla., each Saturday, arrives New York early Monday.

Current Statistics

Operating revenues		
10 mos., 1960	..	$8,026,250,454
10 mos., 1959	..	8,198,581,085
Operating expenses		
10 mos., 1960	..	6,348,307,408
10 mos., 1959	..	6,432,869,535
Taxes		
10 mos., 1960	..	869,191,013
10 mos., 1959	..	879,973,498
Net railway operating income		
10 mos., 1960	..	502,732,957
10 mos., 1959	..	614,921,615
Net income estimated		
10 mos., 1960	..	358,000,000
10 mos., 1959	..	443,000,000
Carloadings revenue freight		
51 wks., 1960	..	30,033,263
51 wks., 1959	..	30,530,692
Freight cars on order		
Dec. 1, 1960	...	22,781
Dec. 1, 1959	...	36,555
Freight cars delivered		
11 mos., 1960	..	52,115
11 mos., 1959	..	34,254

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Doyle Asks Transport Changes

► **The Story at a Glance: Proposals for a Federal Transportation Commission to take over economic regulation of all modes of transport and a Department of Transportation to take over or supervise all other federal-government activities in the transport field are among numerous recommendations of the so-called Doyle Report.**

The report is that submitted to the Senate Interstate Commerce Committee by Gen. John P. Doyle, director of the study group created more than two years ago to consider problems left untouched by the Transportation Act of 1958.

The report opposes the railroad industry's bid for more freedom to operate other forms of transport, suggesting instead a drive to develop joint-rate and through-rate arrangements. Meanwhile, it favors adequate user charges on publicly-provided transport facilities, legislation to promote regional consolidations of railroads, tighter cost-showing requirements in competitive rate cases, and consolidation of all federal transport law into a Federal Transportation Act with a new declaration of national transportation policy.

Because its assignment called for consideration of several controversial transport questions, the Doyle group's report has been awaited with much interest.

General Doyle calls the present document of some 800 pages a "draft" prepared for submission to the committee members and members of his advisory council consisting of representatives of interested parties. He suggested to the committee's chairman, Senator Magnuson of Washington, that the committee will want to hold hearings before adopting the report as its own.

The group's assignment called first for a study of the need for regulation of transportation under present conditions, and of the type of regulation required if any is needed. The group got no serious recommendation that regulation be discarded, so it concluded that transport regulation must be essential in the public interest.

As to the type of regulation needed, the report expresses opposition to regulation of inter-modal competition which amounts to allocation of traffic. It says the shipper should do the allocating but it finds a public interest in having traffic allocated on the basis of economic fitness.

This public interest is said to be "directly in conflict" with the national transportation policy's call for preservation of the "inherent" advantages of each mode of transport. "Inherent" is defined as "fixed" or "permanent" and the report goes on to point out that changing circumstances may cause an efficient mode of transport to disappear. Thus, it advises, no effort should be expended on preserving advantages, real or fancied, which no longer exist.

Later on, the report says present regulatory policy has fostered preservation of the status quo, "which is in direct opposition to the overall objective of a dynamic national transportation system which can best serve the economy and defense of the country." The proposed new declaration of policy follows:

"It is hereby declared to be the national transportation policy of the Congress to provide for flexible, coordinated and impartial promotion and regulation of all modes of transportation engaged in interstate commerce in a manner consistent with the primary objective of fostering an adequate, coordinated national transportation system having as its nucleus privately owned and operated regulated common carriers by all modes and so as to provide for recognition, development and full realization of the relative advantages and characteristics of each mode while recognizing as paramount the public interest in a coordinated na-

MacNamara, Murray Head New Soo Line

G. Allan MacNamara

Leonard H. Murray

G. Allan MacNamara has been elected chairman of the board and Leonard H. Murray president of the newly merged Soo Line. Mr. MacNamara, 66, had been president of the MStP&SSM for the past 10 years; Mr. Murray, 47, was elected president of the DSS&A in 1958. President Edgar F. Zelle, 70, of the Wisconsin Central, has retired effective Jan. 1.

Mr. MacNamara started railroading with the Canadian Northern (now Canadian National) in 1912, moved to Canadian Pacific in 1920 and advanced through CP's traffic department to a vice presidency in 1948.

Mr. Murray, an attorney, joined DSS&A as assistant to the president in 1949. He was named vice president and secretary of the DSS&A in 1952, and also served as secretary to the reorganization managers of the Wisconsin Central in 1953 and 1954 and as vice president of the WC since 1954.

The new Soo Line board of directors, meeting for the first time Jan. 3 in Minneapolis, also elected J. D. Bond executive vice president and appointed four other vice presidents: F. W. Crouch, vice president and general counsel; R.L. Thorfinnson, vice president—traffic; M. I. LaBelle, vice president—accounting; and T. R. Klingel, vice president—operations and maintenance.

tional transportation system which provides safe and adequate service in the most economical manner by individual modes and by combinations thereof, at just and reasonable charges therefor, and without unfair competitive practices as between carriers; so administered in promotional activities as to identify national, regional and local needs for transportation development and to satisfy these needs in the most economical manner considering the relative fitness and the characteristics of the several modes, to the end that the transportation resources of the nation are efficiently allocated; and so administered in regulation as to recognize cost relationships in the adjustment of rates and charges, without unjust discrimination or undue preferences or advantages as between users of transportation, and to facilitate effective means for coordinating transportation services, and to foster adjustments in the organization and structure of the transportation system and the component modes thereof toward maximizing the efficiency of each; to cooperate with the several states and the duly authorized officials thereof, all to the end that the needs of the commerce of the United States, of the postal system and the national defense are met.

"All actions of federal agencies in matters affecting transportation shall be carried out in accordance with the above declaration of policy."

The proposed Federal Transportation Commission would be an agency of Congress, like the present regulatory bodies. It would be a 15-member commission with a "strong" chairman. Terms of commissioners would be 10 years.

It would have regulatory jurisdiction now vested in the ICC, Civil Aeronautics Board and Federal Maritime Board. Matters covered would include: operating rights, rates, promulgation of safety regulations, investigation of accidents enforcement, coordination of transportation research in cooperation with the proposed Department of Transportation.

In addition to the non-regulatory functions of the commissions, the D. of T. would take over the Bureau of Public Roads, Defense Air Transport Administration, Federal Aviation Agency, Maritime Administration, Panama Canal Co. and St. Lawrence Seaway Development Corp.

The department would also be responsible, from an executive viewpoint, for transport policy and surveillance of such functions as the General Service Administration's traffic-management activities and navigation phases of the Army's civil works program,

Watching Washington *with Walter Taft*

• **A VOICE OF EXPERIENCE** says Congressional leaders won't go along with those proposals of the Landis report (RA, Jan. 2, p. 8) which would bring regulatory commissions under close Presidential scrutiny and thus tend to convert them into executive agencies. The voice is that of Burton K. Wheeler, former senator from Montana.

MR. WHEELER served as chairman of the Senate's Interstate Commerce Committee from 1935 through 1946. That was a period in which Congress enacted such important transport legislation as the Motor Carrier Act, the Transportation Act of 1940, the Interstate Commerce Act's Part IV which regulates freight forwarders, the Reed-Bulwinkle Act which grants antitrust immunity for carrier rate procedures, and the act which repealed land-grant rates.

THE LANDIS REPORT was made to President-Elect Kennedy by James M. Landis, who served in New Deal days in chairmanships of two regulatory commissions—Securities and Exchange Commission and Civil Aeronautics Board. The report calls for more Presidential attention to the regulators, and Mr. Landis will head the Office for the Oversight of Regulatory Agencies which he recommends as an addition to the President's executive set-up.

THE RECOMMENDATIONS as a whole tell Congress "how to do it" if it wants to abandon the 73-year-old plan of maintaining the commissions as its own agencies, Mr. Wheeler says. He points out that the commissions were created only to carry out policies set by Congress, and he thinks Congress should continue to set policies in the areas involved.

THE FORMER SENATOR RECALLS how he successfully opposed similar revampings proposed by former President Roosevelt. And he thinks present Congressional leaders will take a like position. He also recalls that he once told FDR there would be nothing wrong with the regulatory agencies "if you'd quit appointing political hacks."

THE ANSWER, as Mr. Wheeler follows through to say, is the appointment of honest and competent commissioners. This is also one of Mr. Landis' conclusions. His report refers to what he calls the post-war "deterioration in the quality of our administrative personnel . . . both at the top level and throughout the staff."

AS TO THE ICC, Mr. Wheeler thinks it has been "one of the best," even though he did not always agree with it. Mr. Landis calls it one of the agencies "principally calling for reorganization."

PRESUMABLY, Mr. Landis would undertake to have legislative recommendations of all regulatory agencies cleared by his office. His report says the desirability of clearing such recommendations through an executive agency is "now generally acknowledged, though at one time contested by Commissioner Eastman of the ICC." This seems to be a reference to the ICC's refusal to meet former President Roosevelt's request for clearance of its legislative recommendations with the Bureau of the Budget.

A CHECK at the ICC showed that this position was taken in 1938 by the entire Commission, and that Mr. Roosevelt was so advised by letter from the Commission's chairman, who was the late Carroll Miller. The check also revealed that the Commission has since taken no action to change that position.

while other suggestions for the department propose that it be called upon for leadership in various transport areas, including promotion of technological advances by all modes and arranging for service during national or regional emergencies.

The report's recommendation against "common ownership," or removal of restrictions against railroad operation of other modes of transport is on an "at-this-time" basis. The study group is "convinced" that repeal of the restrictions, without policy changes and adoption of some of its other recommendations "might simply be regarded as pulling all stops." Meanwhile, the report also says:

"We do not reject the idea of transportation companies for the future . . . when evidence indicates that common ownership would operate for the general good rather than for the benefit of a dominant mode."

Among justifications for this approach is a statement in the report saying "no one claims removal of restrictions would immediately solve [railroad] problems." The alternative approach of joint rates and through routes should be embarked upon with everything necessary to make it effective, the report recommends. That's because there is a "discouraging history" of undertakings to advance along those lines.

Thus the report recommends that the Interstate Commerce Act's through-route and joint-rate provisions be amended to make them applicable to common carriers of all modes, and that interchange requirements now imposed on railroads be imposed on all intra-mode and inter-mode interchanges.

Also recommended is the establishment of regional joint rate bureaus, "under the anti-trust umbrella," to facilitate inter-mode rates and routes; strengthening of regulatory agency powers to require through routes; arrangements whereby users, as well as carriers, may initiate applications for joint rates and routes; and requirements for full cost information from parties to joint-rate cases.

In thus disposing of the common-ownership issue, the study group takes comfort in the ICC's 1958 refusal to take a position. The Commission then told a Congressional committee that the issue was one of broad policy which only Congress could resolve. "If the expert body was not in a position to express an informed opinion upon this grave question, no one was," the report says.

The report does recommend, however, that the Interstate Commerce Act be amended to leave auxiliary-to-rail language in, but to leave the matter entirely up to the ICC in each case, i.e., to "repeal the broad Congressional policy" against railroad operation of other forms of transport.

The user-charge recommendations would extend the highway pattern to the airways and waterways, meanwhile seeing that charges for highway use are equitable. The proposed charges on waterways, however, would be based on costs of future projects. All past costs and the costs of capital improvements presently under construction should be foregone," the report says.

The proposed airway and waterway charges, like levies on highway users, would include registration fees on aircraft and watercraft and fuel taxes. They would be started at relatively low levels and raised gradually over a 10-year period to the point where they left the government whole.

Here the report refers to the aviation industry as one "that has expressed its willingness to assume its share of the burden." Of the opposition from waterway users, it has this to say:

"They seek the perpetuation of waterway transport, and its extension to new areas, on some other basis than economic fitness. To the extent they succeed unnecessary transportation costs will be imposed on the

ICC Lets Differentials Stand

Eighty-three-year-old rate differentials in favor of Philadelphia, Baltimore and Hampton Roads ports won't be disturbed.

The ICC has condemned tariffs whereby railroads serving New York City, Albany, Boston and Portland proposed to eliminate the differentials on all export and import traffic except iron ore, coal and coke. Also condemned are retaliatory tariffs whereby railroads serving the differential ports advanced counter-proposals to reduce their rates by amounts necessary to preserve the differentials.

The tariffs in issue were filed about four-and-one-half years ago. They have been suspended since — first by orders of the Commission and then by voluntary action of the carriers. They would have equalized import and export rates, on the Baltimore basis, to and from so-called differential territory. Generally, that's Central Freight Association and Illinois Freight Association territories and southern Wisconsin.

The differentials, ranging from two to eight cents per 100 lb, have been in effect since 1877—except for brief periods of disagreement between the carriers during the 1880's. They have been assailed many times by port interests, but the present case (I&S No. 6615) is the first in which railroads sought to eliminate them.

Equalization of ocean-shipping rates to and from the ports was the main prop of the equalizers' case. While the Commission conceded that circumstances warranting some modification of the present adjustment may arise, it went on to point out that the burden of establishing need for a change rests upon the proponents.

The report then proceeded to conclude that this burden had not been met. In doing so it had this to say:

"The present differentials have long served to retain a reasonable competitive relationship between the principal port groups. . . . The evidence upon which the respondents rely is not convincing that their proposed rates are necessary to afford them and the northern tier ports the opportunity to compete for a larger proportionate share of the traffic here considered.

"On the contrary, the record is clear that New York continues to attract more of the highly desirable general-cargo tonnage so vital to its port economy than all of the other north Atlantic ports combined; that to obtain a volume of traffic which will support a much lower level of port activity and range of shipping services than New York, the southern tier ports have been depending heavily on bulk-cargo tonnage; and that, considering the volume and character of the traffic and other circumstances, undue diversion from those ports to New York . . . would result from the proposed equalization."

A lengthy dissent came from Commissioner Webb. He would have approved the equalization proposal which he called merely an undertaking "to reinstate a rate-making policy voluntarily established 83 years ago—a policy which lapsed when ocean rates were equalized around 1935 without corresponding adjustment of rail rates."

Concurrence "in the result" of the majority report was noted by Commissioner Freas in a brief statement in which Commissioner McPherson also joined. They agreed that the equalizers had not met burden-of-proof requirements and thus the tariffs were properly condemned. They added, however, that "this is the extent of the finding the record justified and all that is necessary to the disposition of the proceeding."

Private Truckers, Too, Find . . .

. . . 'Turnpike Trains' Appealing

A large mail order house, Montgomery Ward & Co., has asked for and received permission to operate multiple unit tandem trailers—so-called "double bottoms"—on the New York Thruway. Wards finds the twin-trailer units hauled by a single tractor "an opportunity to economize by using the ultimate in cubic capacity," says T. C. Hope, traffic manager of the firm.

In beginning double bottom operation, private carrier Montgomery Ward joins a number of New York common carriers, who have been turning in increasing numbers to multiple trailer units to cut their ton-mile costs. Tandem trailers behind a single tractor, long a factor in truck operations in the West, are becoming an increasingly important part of highway operations in the East. Double-bottom growth began when the New York Thruway decided in 1959 to test 98-ft, 65-ton maximum size units.

Tests on the Thruway proved that towing two trailers with one motive power unit could offer important advantages: for the truckers and the turnpikes. Although larger power units were required, the new rigs made possible major savings for the truckers, both in labor and in plant—which meant more vehicles passing through toll booths.

The New York Thruway, the Massachusetts Turnpike, Indiana Turnpike, Ohio Turnpike and Kansas Turnpike all permit "turnpike train" operations, and other toll roads are testing the idea. The Pennsylvania Turnpike, which does not permit double bottoms, has taken a different approach to improving highway ton-mile costs by increasing the maximum length of certain trailers to 60 ft (RA, Oct. 10, 1960, p. 47).

There seems to be a strong likelihood that double bottoms will spread—to other private carriage and, perhaps, to the Interstate Highway System as well. As Spector Freight System, a double-bottom pioneer, put it: "Several months of scheduled operations proved to the satisfaction of the authorities governing these toll roads the total desirability of 'doubles,' and they were approved for regular service. We foresee the use of these double bottoms on limited access highways as their economic and national defense aspects become evident."

Railway Age Photos by Jim Shaughnessy

national economy."

The recommendations as to railroad consolidations are bottomed on "basic principles" setting forth that (a) general consolidation must be approached on a national or regional basis; (b) effective intra-mode competition should be preserved between the minimum number of systems where traffic justifies; (c) rail monopoly should result in restrictive areas where traffic flow is inadequate to support competition; (d) no obstacle should be placed in the way of joint use of facilities; (e) no system involved in a general consolidation should be required to absorb a carrier or portion of a carrier which it did not consider desirable or useful.

The framing of a consolidation plan "should be left to the railroad industry if at all possible," the report says. At the same time it would provide for government prodding—either by the proposed Department of Transportation or a temporary agency. The job of dealing with consolidations would be taken away from the regulatory agency which, the report says, is not geared for the necessary collaboration with the industry.

In addition to giving the consolidation assignment to the D. of T. or a temporary agency, the proposed legislation would require the railroad industry to set up a special task force to prepare regional consolidation plans. The industry would be given a year to submit a proposed plan for Official Territory. If it didn't do so, the government agency would be required, within another year, to submit recommendations to Congress for further action, the recommendations to include a proposed Official-Territory consolidation plan.

The report's general position on competitive rates is that "pricing of service by competing modes must insure a fair return over the long run to economically fit carriers," and that it is "contrary to the public interest to permit selective pricing of service below cost of production plus a fair return as a competitive tool to attract traffic."

More specifically, the report calls for greater emphasis on cost in rate-making; and it thinks long-run marginal costs should be the basis for identifying the rate-making carrier in a competitive situation. Long-run marginal costs are defined generally as those including "approximate fixed costs attributable to additional output as well as those costs which obviously vary directly with changes in output."

Proposed rules for a "modern rate-making policy," as set out in the re-

(*Continued on page 30*)

What's Wrong With Railroad TV?

► **The Story at a Glance: Railroad television, heralded as having great promise a few years ago, has not scored the important breakthroughs predicted. Roads today are using TV in a variety of ways—but with the exception of car checking in yards, most installations are one-of-a-kind.**

The reason is not that television has no value in railroad operation. Rather, it's a combination of things, ranging from lighting, to equipment design, to severe competition for scarce investment dollars. Manufacturers have not pushed the market aggressively, apparently in recognition that it wouldn't be easy to recapture research and engineering costs.

There is no reliable record of the number of railroads which have made test installations of TV during the past decade. There are fewer than 12 railroads with such installations in service now (see the accompanying table).

The reasons behind this slow acceptance are several. Indeed, TV may be one of those things which despite its flexibility and growing use in other industry, has only a limited place in railroad operation. Such a view must be considered cautiously, however, since railroad TV is still in the experimental stage.

Recent conversations with communications officers have turned up at least five reasons why the railroad TV picture continues largely out of focus:

● Television instruments are delicate by their very nature. The idea of using such equipment outside of buildings seems to worry some railroad men. Weather is mentioned less frequently than vibration—for example, how well and how long would such equipment withstand the recurring rumble of passing trains? If there is any truth in such fears, and TV's success in car checking suggests there isn't, this objection could no doubt be overcome with shock-absorbing mounting and beefed-up housing. This would pose no problem to manufacturers.

● The indicated return on investment, based on experience to date, is low. This causes budget-minded railroads to spend their scarce funds where the payoff is quicker. Most of the tools and equipment purchased these days produce immediate labor savings with no adverse effect on service. TV might, in some ways, improve or speed an operation; but railroad men say it does not presently offer favorable labor-saving opportunities.

Closely related to this railroad quest for more automation is the fact that TV has not been made an integral part of data processing. At least not yet. One railroad officer says he feels that TV in its present form is a "half-way measure." One railroad uses a TV camera to photograph passing trains. The developed film is then used for car checking purposes. "Going one step further," says a railroad's EDP director, "would be to pass the film before an optical scanner. This instrument would 'read the film' to produce a typewritten, punch card, magnetic film or paper tape record of car initials and numbers. Thus automatic car checking could be incorporated into the data processing system—from cameras, to photographic film storage, to tape or cards for interoffice transmission." This way, TV wouldn't be just an island in the operation; it would be part of an integrated system.

● The very nature of a railroad is a handicap to TV usage, too. In a bank, for example, a single security officer can monitor an entire floor's operation. His space area is small, his lighting conditions constant. Keeping tab on a large classification yard is quite another thing. Sheer size is part of the problem. So is lighting. (One road that hoped to eliminate elevated yard towers by substituting pole-mounted TV cameras gave up the idea. Picture reception was unacceptable, it said, even after testing several types of lenses and remote controls).

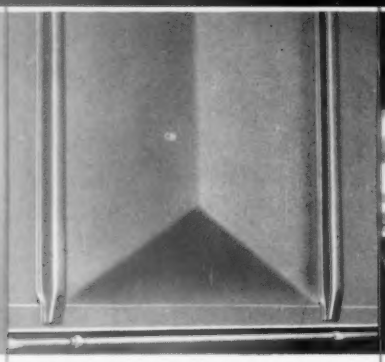
● Use of television to monitor freighthouse operations, or to protect against pilferage, seems a more logical assignment. While such usage can be expected in the future, there is none now. Again, it seems to be a matter of initial cost. One motor carrier is presently using television at lcl docks to provide the platform foreman with general surveillance of the docking areas. The supervisor can watch how freight is stacked, and can quickly change spot numbers when one loading dock area becomes congested.

In spite of these general reservations, however, a number of railroads have moved ahead with television installations and these, for the most part, seem to be successful.

Railroad Television Installations

Delaware & Hudson	Cohoes, N.Y. (highway-railroad grade crossing)
Jersey Central Lines	Jersey City, N.J. (coal dumper)
Louisville & Nashville	Atlanta, Ga. (car checking)
	Boyles, Ala. (car checking)
New York Central	Elkhart, Ind. (car checking)
	Indianapolis, Ind. (car checking)
	Ashtabula, Ohio (scrap shearing)
New York, New Haven & Hartford	New Haven, Conn. (car checking)
Pennsylvania	New York, N.Y. (passenger reservations)
	Pittsburgh, Pa. (switching at interlocking)
Pittsburgh & Lake Erie	Youngstown, Ohio (car checking)
Richmond, Fredericksburg & Potomac	Alexandria, Va. (car checking)
Southern	Atlanta, Ga. (car checking)
	Birmingham, Ala. (car checking)
	Chattanooga, Tenn. (car checking)
	Knoxville, Tenn. (car checking)
Southern Pacific	Sacramento, Cal. (ice dock operations)
Western Maryland	Hagerstown, Md. (car checking)

FEATURE: Extra Strength. An inside band, in addition to the usual corner cap, gives added strength to inside top corners where ordinary hopper cars often fail. This construction "extra" is typical of the attention-to-detail that gives PS-3s rugged durability.



FEATURE: Extra Service. Vertical embossments pressed into side sheets between side posts minimize flutter under shake-out machine use and increase service life to sides. Quality features such as this assure purchasers maximum value when they buy PS-3s.

FEATURE: Extra Stamina. Typical of PS-3 stamina are the hopper chutes and doors; both of ⅜" plate. High strength steel door frames are welded to the chutes inside and outside to provide strong, crevice-free, corrosion resistant joints.

ANOTHER BENEFIT OF **P-S**
FULL LINE STANDARDIZATION

the rugged durability of...

FEATURE: Extra Cleanliness. Smooth floor sheets with longitudinal welds and rounded flanges at sides cause no material-retaining ledges or pockets to encourage corrosion or slow unloading processes.

PS3

Durability is another of the many built-in and proved characteristics of the standardized Pullman-Standard PS-3 Hopper Car.

This feature, along with high availability and low maintenance performance, is common to the full line of P-S standardized rolling stock. But, due to the punishing demands of hopper car service, durability is a prime requirement of hopper cars and it shows up at its best in the standardized PS-3.

Hopper Cars

3 HOPPER . . . *70-ton Capacity*

Close attention to every design and construction detail results in the kind of durability that keeps maintenance at a minimum; keeps the PS-3 in revenue producing service. Such items as solid crossridge braces, butt welded plates, flanged floor sheet edges and smooth hopper chutes, all result in faster, cleaner unloading and greater shipper acceptance. Embossed side sheets, rugged inside corner bands in addition to corner caps, flanged hood sheets, high mounted air brake reservoir and heavy-duty hopper chute plates and doors with high strength steel door frames provide longer in-service life, low maintenance . . . rugged durability. Investment in Pullman-Standard PS-3s will prove to be a wise addition to your hopper car fleet.

THIS FOLDER YOURS. The whole story of PS-3 Hopper Cars . . . features, construction, specifications, dimensions. See how the PS-3 can result in more revenue per car-dollar. Write today.

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Radio Can Save You Time and

By ROBERT W. McKNIGHT

Signaling & Communications Editor

► **The Story at a Glance: Radio is saving time and money by improving train operations. Dispatcher control of wayside radio stations results in better planning of meets and passes because the dispatcher has constant communication with moving trains. Greater use of walkie-talkies by train crews is speeding up train movements, particularly local freights. Radio usage by m/w gangs is reducing or eliminating delays to trains that must pass through the work areas.**

Radio is fast emerging as an important competitive tool of the railroads. For well over a decade, two-way radio —head-end to rear-end and train-to-wayside—has been clipping precious minutes off over-the-road time of freight trains. Now, dispatcher control of wayside radio stations promises further savings in time and money.

A major reason for dispatcher control is the closing of wayside stations during nights, weekends and holidays. On many roads the dispatcher no longer has open offices every 25-30 miles during these off hours. In train order territory, such a situation creates gaps where the dispatcher is unable to ascertain train locations or issue train orders. Dispatcher control of wayside radio stations fills these gaps.

Here's how the Missouri Pacific did it between the Pueblo, Colo., dispatcher's office and Hoisington, Kan., 339 miles. In this territory radio was installed at Hoisington and Pueblo, as well as in 12 intermediate offices spaced 15 to 30 miles apart.

Radio calls can be made between adjacent wayside stations and between each wayside station and trains. The radio stations are so spaced that a train is never out of reach of a radio base station. A secondary usefulness of these wayside radio stations is that, in case line wires are torn down by storms, instructions can be handled by radio from one station to the next. Because wind storms often damage the pole line between Hoisington and Pueblo, this territory was chosen for complete arrangement of wayside radio throughout.

On-time performance of trains is most important because the MP is a bridge in a transcontinental route. West coast connections are made at Pueblo with the D&RGW, which in turn connects with the WP at Salt Lake City and with the SP at Ogden, Utah. East coast connections are made at St. Louis, Mo., with eastern and southern railroads.

Train movements are authorized by timetable and train orders over single track with automatic block signaling, sidings being equipped with hand-throw switches. The land is flat, and the railroad is practically level with few curves. Maximum permissible speed for passenger trains is 79 mph; for freight trains, 55 mph.

Severe dust storms that occur in western Kansas and eastern Colorado add to the difficulty of train operation. During these storms, visibility is so poor that trains are often required to reduce speed, thus causing delays. Dust seeps into journal boxes, mixes with the oil and packing to form a "waste grab," thus causing a hotbox. Even when wind is not blowing, dust around the track "boils up" under a moving freight train to create a dust cloud that rises up over the car trucks, and this dust seeps into journal boxes.

The dispatcher's problem is that of changing the meeting place of trains delayed by dust storms or hotboxes. He must have accurate information concerning the trains' locations. In daytime, open offices with wayside radio stations average 26 miles apart, from which operators can make radio calls directly to trains to ascertain reasons for, and extent of, delays. The offices at the terminals, Hoisington and Pueblo, are open continuously, as are also four other offices. Wayside radio stations are in service at these six offices and also at eight other offices where operators are on duty either 8 or 16 hours daily.

Therefore, at night there were only five open offices (not counting the dispatcher's location at Pueblo) and their physical spacing was such that there were gaps of 50 to 75 miles where trains were out of radio contact with wayside offices. To eliminate these gaps the Missouri Pacific installed mainline radio control equipment at six of the wayside radio stations which are closed during night hours. This equipment, with the additional control apparatus installed in the dispatcher's office, enables him to control these stations from his office.

When the operator goes off duty at each of the six remotely controlled wayside radio stations, he presses a button on his radio console, putting the station under the dispatcher's control. From there on, the dispatcher has complete control of these radio stations to talk to trains and to permit trains to call him. To call a train, the dispatcher simply depresses a key for that station, stepping on his foot switch and talking into his microphone. His voice goes via line wire to the station and from there via radio to the train. When he steps on his foot switch, he keys the station transmitter.

Knowing the approximate location of all trains, the dispatcher places each remotely controlled station in the position of receiving calls from trains through these stations. He does this by depressing a key on his console, which selects this station for receiving calls. He may eliminate any station from the receiving position by depressing another key on his console. Thus, he can receive or reject calls from trains at any one or

Typical Dispatcher-Control Radio Systems

Railroad	Road Miles	Territory
ACL	476	Waycross-Atlanta-Birmingham
C&EI	164	Danville, Ill.-Evansville, Ind.
CB&Q	1,034	Chicago, Ill.-Denver, Colo.
	128	Lincoln-Ravenna, Neb.
	107	Aurora-Savanna, Ill.
	101	Galesburg-North Quincy, Ill.
DT&I	296	Dearborn, Mich.-Jackson, Ohio
L&HR	86	Easton, Pa.-Maybrook, N.Y.
MP	339	Pueblo, Colo.-Hosington, Kan.
NP	410	Dilworth, Minn.-Glendive, Mont.
RF&P	110	Washington, D C.-Richmond, Va.
SP	155	Sacramento, Cal.-Sparks, Nev.
	194	Eugene-Klamath Falls, Ore.

Money

all stations within a fraction of a second. The result has been that the dispatcher has closer control over trains, because he knows where they are and what they are doing. This up-to-the-minute information enables him to arrange meets so that trains spend less time on sidings. Trains do not get "lost" any more.

Some railroads are finding dispatcher-control radio systems an advantageous adjunct to centralized traffic control. Conventional practice is for one indication lamp to be lighted when a train is between controlled sidings, a distance of 5 to 10 miles. Although the indication lamp is lighted, the exact location of the train in this spacing is not known. When the dispatcher notices that a train, according to the indication lamp on his CTC panel, is taking what he considers an inordinately long time to reach the next siding, he selects the wayside radio station closest to the train. Using this station he radios the train crew to ascertain the reason for the delay. From the conversation he obtains exactly the location of that train. If he has a meet tentatively set up, he may change it because he knows when the train will resume its movement.

The Chicago & Eastern Illinois has a dispatcher control radio system in service between Danville, Ill., and Evansville, Ind., which is in CTC territory. A similar CTC and dispatcher-radio system is in operation on the Southern Pacific between Eugene and Klamath Falls, Ore.

M/W Productivity Improved

The use of radio by maintenance-of-way crews—for such things as rail laying, tie renewal or ballasting gangs—has improved their productivity and reduced or eliminated delays to trains.

Here's how Clinchfield m/w forces use radio for coordination with train movements.

The Clinchfield has three bridge gangs, one rail gang, and two surfacing gangs. Among them they have two tampers, two Burro cranes, one ballast regulator and six motor cars equipped with 6/12-volt automotive type radio. Some of the track machines have a 6-volt battery, others have a 12-volt battery. The plug connectors are so wired, however, that the radio sets may be interchanged without regard to voltage.

Each gang also has two packsets. These are equipped with rechargeable batteries which are plugged in at the camp cars each evening for charge renewing.

While radio expedites the work of the gangs, the biggest benefit is derived from radio flagging. The work limits of a gang are defined by Conditional Stop signs. Each sign is a rectangular board painted red with white diagonal stripes. By regulation, these are always located at a milepost, which facilitates defining the work limits in train orders. An Approach sign (diamond shaped and painted yellow with white horizontal stripes) is placed at least 7,920 ft in approach to the Stop sign. At the end of each day, the foreman contacts the dispatcher and requests orders defining the next days' work limits.

Train crews are issued Form "Y" orders (above) which defines the work limits. Trains holding this order must not proceed beyond the point named in the order or the Conditional Stop sign location there until notified to do so as provided in the order and as required by the rules.

Each such order issued becomes void at the expiration of the time limits named therein and the order cannot again be used.

Rule 110 (b) governing trains encountering work limits reads as follows:

110 (b)—"A train or engine holding train order form 'Y' must not proceed beyond the Conditional Stop sign or the point named in the order until the order becomes void or the train is notified in person by the maintenance foreman named therein, either by means of radio communication or personal contact, that the track is clear. When the order becomes void, or such notice has been so given, the train may proceed on its rights under governing rules and other train orders it may hold. The absence of a Conditional Stop sign at the point named in the order does not authorize movement beyond that location. A Conditional Stop sign found in place after order form 'Y' has become void will be disregarded."

This system of operation has reduced delays to trains by avoiding unnecessary stopping, and to the work gangs by eliminating the need to get into the clear at a fixed time for a train which may be late. Under the former system of using a flagman, it was often necessary to stop a through train because the foreman could not get word to the flagman that the gang and equipment were in the clear. At a cost of about $75 per hour for the train crew and train expense, each stop cost $30 to $40. The gang lost the time the train was stopped unnecessarily; this cost about $25 to $30. Another more tangible saving in manpower was the release of two flagmen for productive work, and savings each work day of some $32 per gang using the radio flagging. Thus if only one train per day per gang was stopped unnecessarily prior to use of radio flagging, the savings amount to around $100 per day.

In today's competitive atmosphere, where faster freight train schedules are essential, three radio usages will see greater growth: (1) dispatcher control of wayside radio stations; (2) walkie-talkies for road train crews; and (3) radio for m/w gangs. All three reduce or eliminate delays to road trains. Cutting a few minutes here, a few minutes there, will help trains make faster schedules. The outlook is for more dispatcher control systems for wayside radio, more walkie-talkies on locomotives and cabooses, and more radio on m/w equipment.

"Y"

CONDITIONAL STOP track sign order

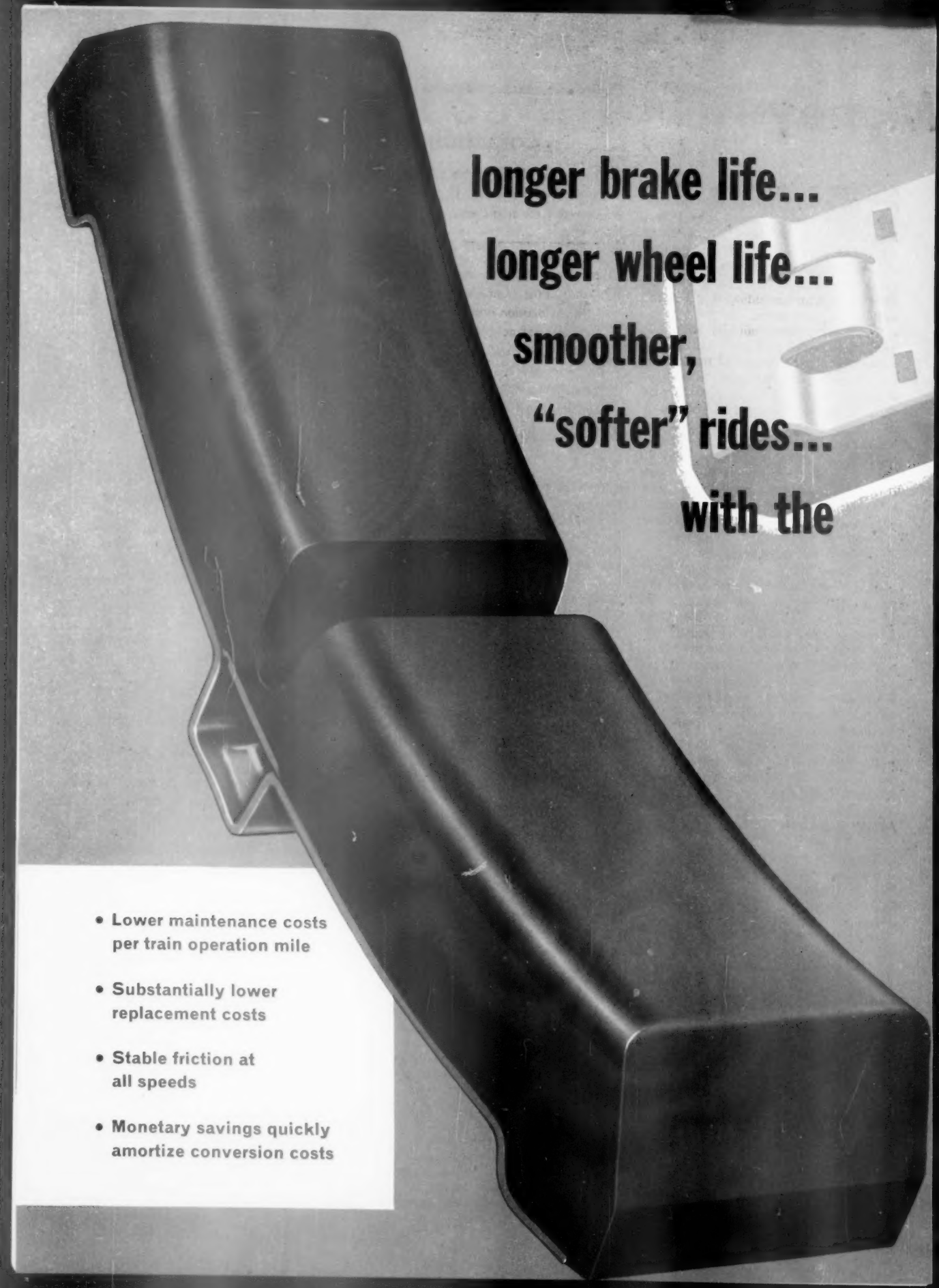
This exact form to be used when it is desired to give the information prescribed by Rule 110 (b):

Between the hours of .....and.....

(Day) (Month) (Date)

northbound trains approach CONDITIONAL STOP sign location at Mile Post ..... and southbound trains approach CONDITIONAL STOP sign location at Mile Post ..... prepared to stop and do not pass this point until notified in person by maintenance Foreman ....., either by means of radio communication or personal contact, that the track is clear.

Train order form "Y" must be a separate order and not issued as a part of another train order. No instructions or information except that specified in the form above will be placed in the order.


longer brake life...
longer wheel life...
smoother,
"softer" rides...
with the
• Lower maintenance costs per train operation mile
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TREAD BRAKE SHOE

Higher and more uniform friction . . . reliable braking performance under all normal operating conditions—that's the ANCHOR Composition Tread Brake Shoe. (Braking forces required are approximately *one-half* those needed with other shoes for equivalent stop performances.)

This reduced shoe load permits a correlative reduction in the size of the air actuating chamber, or by changing brake mechanism. And there's no need to vary brake cylinder pressure to provide high shoe forces at high speeds, with a corresponding lowering of shoe forces as speed is diminished.

The lower forces also cause less wear on pins and bushings—which means less brake rigging maintenance. Truck members can be lighter, less bulky . . . and less costly.

The ANCHOR Shoe successfully meets any known operating conditions. So . . . where superior stop performance is an absolute essential, specify ANCHOR.

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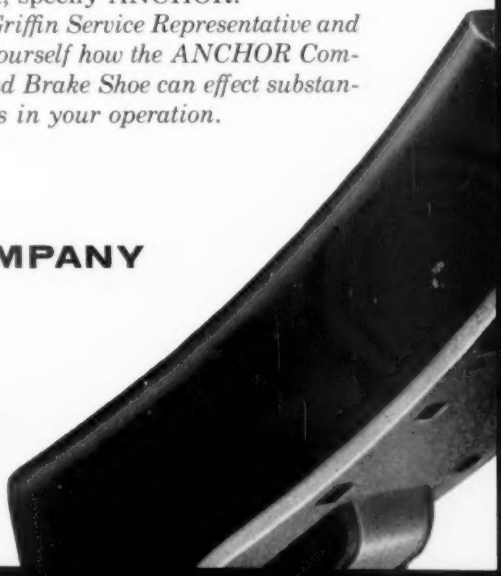
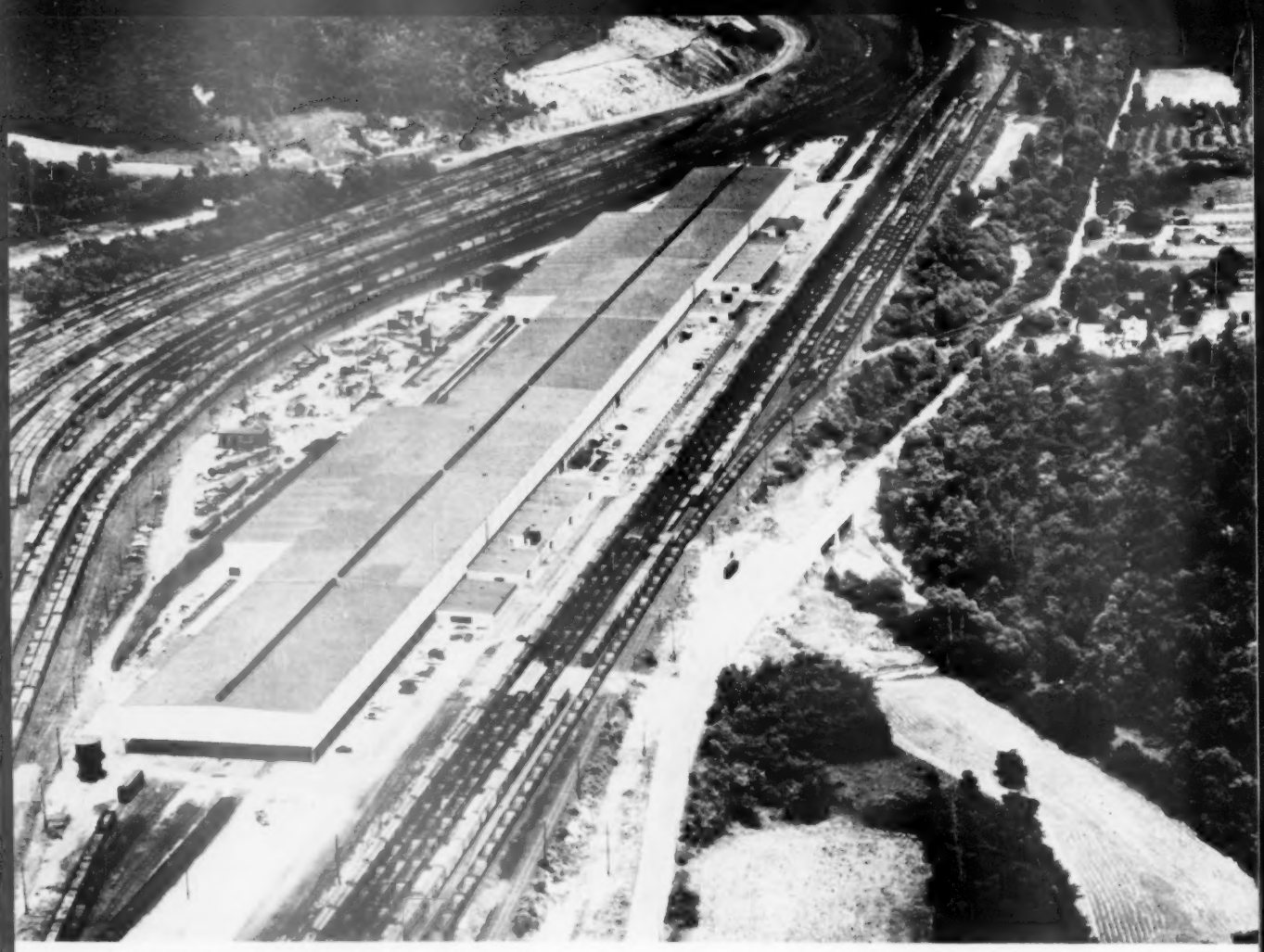




SAMUEL REA SHOP, world's largest freight-car-repair operation under one roof, extends 2,760 ft through the center of the road's Hollidaysburg, Pa., freight yard. The building covers 17 acres and is from 180 to 270 ft wide and 54 ft high. Costing $12,000,000, the shop is now turning out rehabilitated gondola, hopper, and box cars.

PRR Plans for Traffic Upturn

► **The Story at a Glance: Most observers are looking for an upturn in freight carloadings by mid-1961—and the PRR aims to be ready to handle the additional business. The railroad has assigned high priority to a freight-car rehabilitation project which follows a program that added 23,000 new or rehabilitated cars to the PRR fleet.**

The Pennsylvania, which completed a rehabilitation and expansion program for its freight car fleet as recently as mid-1960, is now embarked on a new program.

Despite depressed traffic levels, the road has assigned all facilities of its Samuel Rea shop, Hollidaysburg, Pa., to the new operation. Three production lines—one each for hoppers, gondolas and box cars—are turning out a total of 54 rehabilitated cars daily.

One measure of the importance which the road attaches to the present work came in a year-end statement from PRR President Allen G. Greenough. PRR earnings will not be "particularly good" in 1961, Mr. Greenough said, because plant and equipment repairs "will be a major drain on 1961 earnings."

The present program will thus continue into the current year. If the anticipated improvement in carloadings develops after mid-year, the PRR wants to be ready. Similar timing gave the road a lift at the end of the 1958 recession. The traffic upturn came as new PRR cars began rolling off the production lines.

A major factor in the success of the program was full utilization of the PRR's own car-production capacity. Half the cars ordered were built or rebuilt at the Samuel Rea shop. The program called for five commercial builders to construct 10,000 hoppers and 1,700 gondolas.

The Samuel Rea shop cars were of five basic types and twenty different arrangements, which were completed over an 18-month period. The complicated problems involved in scheduling, fabricating and assembling these diversified car designs were met successfully by the heavy-repair-shops at Altoona and Hollidaysburg.

Cars constructed by the PRR and the contract car builders included 10,300 open-top hoppers, 500 covered hoppers, 6,000 gondolas, 1,000 ore cars,

4,900 box cars, and 300 flats. The most unusual cars were 27½-ft, 80-ton, flat-bottom ore "jennies" (RA, March 21, 1960, p. 20).

First cars built under the PRR's program were 500 covered hoppers, turned out of the Samuel Rea shop during the final quarter of 1958. After that, Samuel Rea's production went up rapidly until output reached 1,082 cars in June 1959. It continued at an average rate of over 50 cars each working day.

With an interruption of only one month caused by material shortages during the 1959 steel strike, the Samuel Rea shop worked steadily from October 1958 until the spring of 1960. Just before the November 1959 shop shutdown brought on by the strike, cars for the program were rolling out at the rate of 61 each working day.

Simultaneously, with the big construction program, the shop operated large, regular repair programs which restored several thousand hoppers, gondolas and box cars to the road's freight-car fleet.

At the present time, additional freight cars are being programmed for rehabilitation. Again, hoppers, gondolas, and box cars are involved. One of the shop's three production tracks is assigned full time to each of the three car types. The schedule calls for 24 box cars, 15 hoppers, and 15 gondolas to be turned out daily.

The tremendous productive capacity built into the Samuel Rea shop has been paying off. The shop was opened in 1955 (RA, Oct. 31, 1955, p. 29). During the past year, the facility has turned out cars well over the rate for which it was designed.

Unlike many railroads which operate their own car-building programs, the PRR produces almost all of its own structural and plate components and does its own subassembly work. Simultaneous operation of assembly lines producing three different types of new or rebuilt cars requires careful coordination, control, and supervision.

The 1958-1960 program, at peak output, operated on a two-shift, five-days-per-week basis. In September 1959, when 61 units (gondola, box and flat cars) were being produced daily, the force at Samuel Rea shop numbered approximately 2,100. The current repair program requires about 1,600 men.

Car components are fabricated at Altoona car shop, South Altoona shop, Hollidaysburg reclamation department, and Juniata locomotive shop. Almost no subassemblies are delivered from these points; fabricated material is brought to the Samuel Rea shop for subassembly. There is almost no fabrication at the Samuel Rea shop, except for some pipe work.

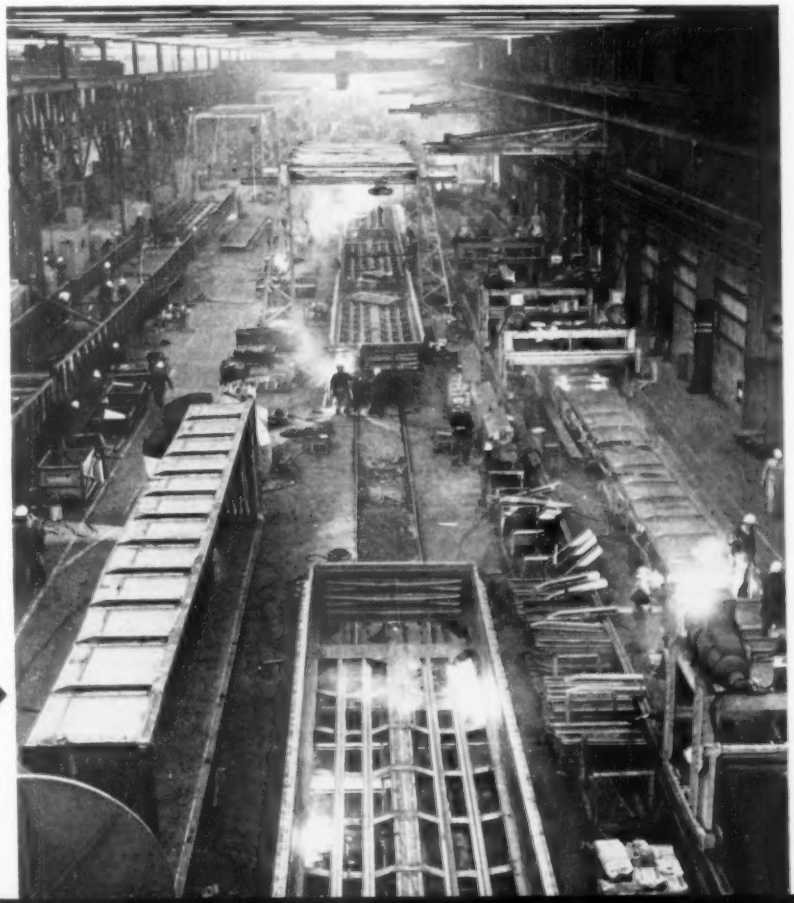
In the 1958-1960 program, over half the wheel sets applied to the Samuel Rea-built cars were processed by the wheel shop at Hollidaysburg which does treads, journals and Magnafluxing. The remainder of the wheels came from the Enola wheel shop at Harrisburg, Pa., and from the Altoona car shop. All cars received rebuilt trucks. New or rebuilt bolsters were applied to permit installation of ride control devices. All couplers were rehabilitated; yokes, draft gears, and brake components were reclaimed. Of the 4,900 box cars constructed, 3,100 were rebuilt with underframes from dismantled cars. Modifications for the re-used underframes included reinforcing the bolsters, installing heavier side sills and additional cross-bearers, diaphragms, and floor stringers.

There are three tracks through the Samuel Rea shop which can be used as assembly lines. Between May 1959 and May 1960, Track 3 was used for five different construction programs, and it turned out well over 2,000 cars. Normally, scheduling was so tight that rearrangement of the lines for a new series of cars without interruption or disruption of work forces was difficult. However, the PRR succeeded in maintaining a steady working force.

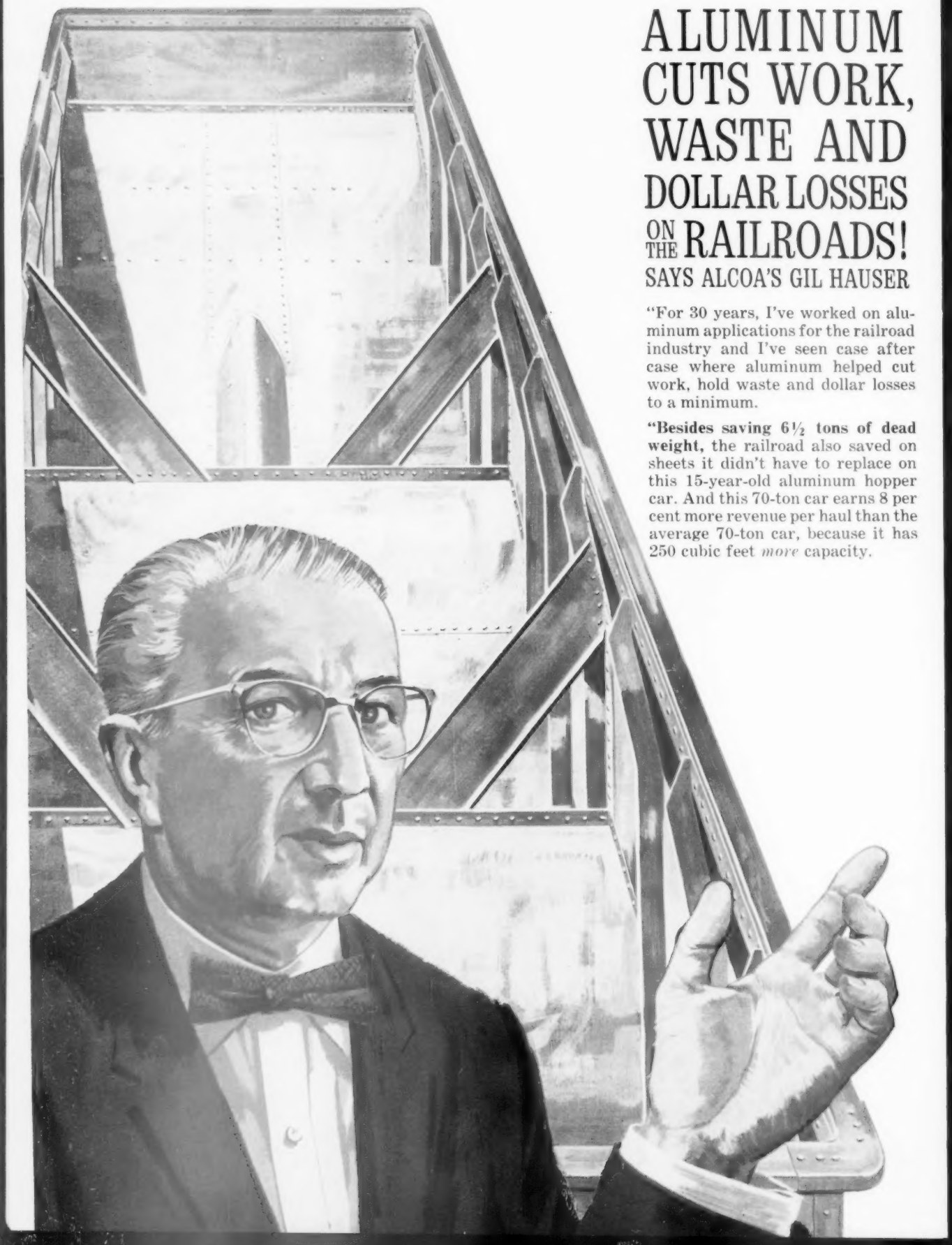
Car builders' deliveries in the 23,000-car program were completed at the end of July 1960. The PRR had ordered 10,000 standardized 70-ton hopper cars, of which ACF Industries built 4,000, Bethlehem Steel built 4,000, and Greenville Steel Car and Pullman-Standard built 1,000 each. The hopper cars were the first to be built using the recently adopted 70-ton alternate standard AAR design. Although developed jointly with the Chesapeake & Ohio and Norfolk & Western, the car has been ordered in quantity only by the PRR.

In addition to the hoppers, 1,700 52½-ft gondolas were built by General American.

After the last of the PRR-built cars rolled out of Samuel Rea shop, the facilities were assigned to rehabilitation work. This has culminated in the latest program. Samuel Rea will continue to have the major role in providing sufficient freight cars to meet the requirements of PRR customers.



ALL-WELDED GONDOLAS were important phase of 23,000-car program. Samuel Rea shop has, from its opening, been equipped with elaborate welding set-ups.



ALUMINUM CUTS WORK, WASTE AND DOLLAR LOSSES ON THE RAILROADS!

SAYS ALCOA'S GIL HAUSER

"For 30 years, I've worked on aluminum applications for the railroad industry and I've seen case after case where aluminum helped cut work, hold waste and dollar losses to a minimum.

"Besides saving 6½ tons of dead weight, the railroad also saved on sheets it didn't have to replace on this 15-year-old aluminum hopper car. And this 70-ton car earns 8 per cent more revenue per haul than the average 70-ton car, because it has 250 cubic feet *more* capacity.

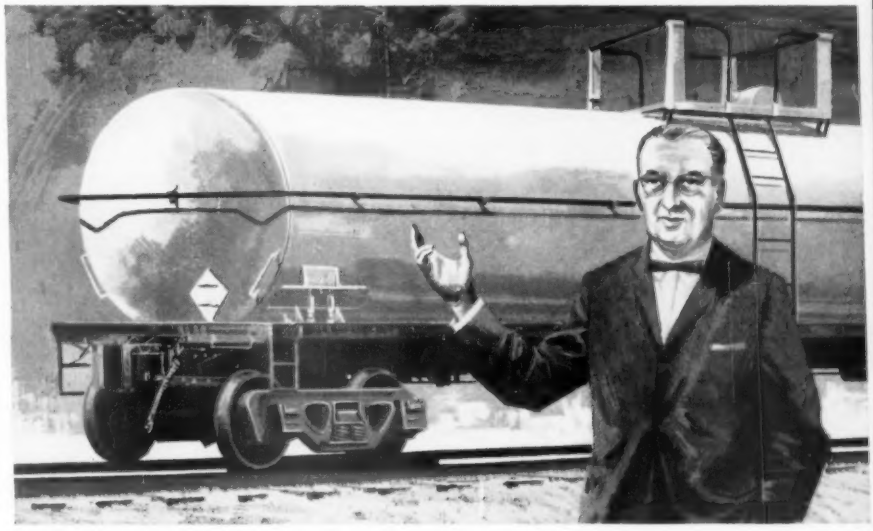
"Even highly corrosive sulfur can't hurt aluminum, nor can the worst weather and atmospheric conditions. A big western road is obtaining 200 hopper cars like this . . . cars that can carry almost any kind of commodity. And they'll last for years without the need for *any* repairs due to corrosion.

"Again, Alcoa Aluminum's weight-strength ratio pays off, as it did for these cars, built on 100-ton trucks. Cubic capacity is increased and so is revenue per haul, because the same weight body is *bigger* in aluminum . . . the same capacity body is *lighter* in aluminum!

"New and revolutionary designs in tank cars — 20,000-gal tank cars without domes—are being built of aluminum. Alcoa has been deep in aluminum tank car design right from the beginning . . . evolving new welding techniques . . . creating new alloys . . . developing fabricating practices.

"Only half the weight of steel doors, these 10-ft-wide aluminum boxcar doors don't corrode, don't stick—always open and close easily. Alcoa supplied the aluminum and worked closely with the fabricator during production. Unlike heavy steel doors, aluminum doors last as long as the car itself.

"Compare the initial cost difference . . . then estimate how much less aluminum cars will cost through the years. Ask the car builder to quote in both aluminum and steel! We don't know everything about putting aluminum to work on the railroads—even after 30 years—but we certainly know more than anyone else in the aluminum field! And any time you want some information, call me collect: Gil Hauser, HIland 1-5826 in Pittsburgh . . . or write: Aluminum Company of America, 1772-A Alcoa Building, Pittsburgh 19, Pa."



ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

EXAMPLE of ring compression design is afforded by this twin vehicular underpass in railroad embankment at Parrish, Ala. These culverts are of 7-gage Multi-Plate construction and each has a vertical diameter of 18½ ft and a horizontal span of 16 ft 8 in. Length is 168 ft and fill is 25 ft high above the structure.

Metal Culverts Can Be Bigger

RING COMPRESSION theory is demonstrated by Howard L. White of Armco Drainage & Metal Products. Coffee can with ends removed is easily flattened between thumb and forefinger. Behavior of conduit in compacted fill is simulated by enclosing can in wood block "fill." Can, supported uniformly around circumference, can withstand puncturing or the weight of a man.

► **The Story at a Glance: An Armco research project has resulted in development of a new method of designing corrugated metal culverts. Known as the ring compression method, the new concept involves use of a simple formula for computing the load transmitted to the pipe wall. As a result, says the company, the way has been opened to much larger and lighter structures.**

A giant corrugated metal structure installed recently by the L&N was designed by the new method. Said to be the largest such structure under any main-line railroad in the United States, it has a height of 21 ft and a horizontal span of 19 ft.

Corrugated metal-pipe structures may now be built considerably larger and lighter than ever before, according to an announcement by Armco Drainage & Metal Products, Inc., a subsidiary of Armco Steel Corporation.

This has been made possible, says the announcement, by a research project which led to development of a method of design and construction which "offers for the first time a simple, mathematical method of analyzing the behavior of a corrugated metal conduit enclosed in compacted fill." In addition to allowing such structures to be built larger and lighter, the new concept of design, says the company, permits them to be covered with embankments much higher than previously thought possible.

The new development is based on a method of design which analyzes the corrugated metal structure encased in compacted backfill as a thin ring in compression, according to Howard L. White, chief sales engineer of AD&MP. Previously, the complex calculations involved in designing corrugated structures had led to the use of gage tables which were derived from observations

of such structures in service.

The ring compression method of analysis now offers, it is said, a simple formula for computing the load transmitted to the pipe wall. From this figure the proper gage of steel for the structure is determined. Hence, it is said, engineers are no longer limited by handbook tables, and are able to make all necessary calculations with complete reliability.

A corrugated metal pipe installed in well-compacted backfill acts, according to Mr. White, as a thin ring in compression with uniformly distributed forces acting along the circumference. The first step in the method is to determine the intensity of the external pressure acting on the ring. This is calculated by multiplying the height of the fill above the pipe by the density of the material and adding the live load, i.e., the weight of rolling stock in case of a railroad installation. The resulting figure is multiplied by the radius of the pipe to obtain the compressive force acting on the ring. This figure is then multiplied by a factor of safety to obtain the strength required in the ring. Reference to manufacturers' strength charts will then give the gage and seam construction required for the installation.

As part of the research work carried out in developing the new methods, more than thirty test structures were designed and constructed. These ranged in diameter from 16 ft to 24 ft, and had steel plate walls as thin as ⅛ in.

In addition to producing the ring compression method of design the study:

(1) Showed that pipe-arches can withstand loads equal to those of round structures.

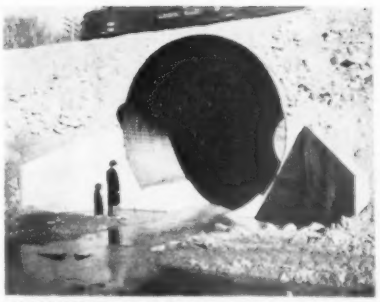
(2) Pointed up the importance of proper backfilling.

(3) Resulted in a means of closely estimating the reaction pressures of soils, thus producing information essential in the selection of proper backfill material.

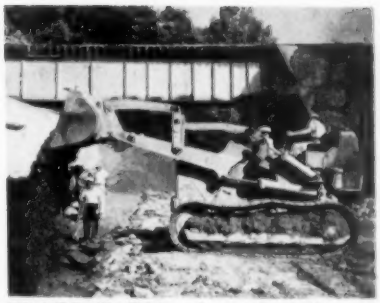
(4) Provided data on reaction pressures that permit reliable design of arch footings.

(5) Showed that vertical or horizontal strutting can be eliminated during construction of corrugated pipes by close control of backfilling.

With reference to backfilling, the study, according to the company, indicated a need for selecting drainable material free of large rocks, lumps or frozen material, and placing and compacting it in 6-in. lifts under haunches and close to the pipe. Remaining material near the pipe should be thoroughly compacted with vibrating or mechanical equipment, it was stated.



CULVERT on L&N is said to be largest under main-line track in the U.S.



TRAXCAVATOR places backfill material around the 21-ft-high culvert.

New Method Used on L&N Job

A huge Armco Multi-Plate Culvert recently installed at Independence, Ky., 12 miles south of Cincinnati, Ohio, is an example of the application of the ring compression method of designing such structures. It is part of an 1,800-ft.-long bypass line on the Louisville & Nashville that eliminates an old masonry-lined tunnel and two bridges.

Said to be the largest metal structure under any main-line railroad in the United States, the L&N culvert is elliptical in cross section, with a vertical rise of 21 ft and a horizontal span of 19 ft. It is covered by 14 ft of fill and is 100 ft long. To obtain this length 13 one-gage rings were used: 11 rings 8 ft long and two rings 6 ft long.

Here's the situation that produced the need for the large waterway opening provided by the new culvert:

Because L&N Tunnel No. 8 needed extensive repairs, the road decided to build the new line around it. Both the old and new alinements are crossed by Banklick creek at two locations. Bridges 38 and 39 carried the old line over the stream at those points.

To carry the normal flow under the new line at the location of Bridge 38 a 48-in. culvert was installed. Any high-water flow will be carried by a channel which parallels the new roadbed.

However, an entirely different situation prevails at the location of Bridge 39 which is downstream from Bridge 38. The difference is created by the fact that a tributary joins the stream between the two bridges. Since the flow in the two streams sometimes reaches large proportions, a bridge or a larger diameter culvert was necessary to carry it under the new line. After considerable study of alternative designs, the installation of a large culvert was approved on the basis that it would result in large savings in time and money.

Design of the culvert by the ring compression method was based on a dead load obtained by multiplying the height of the cover, 14 ft, by the unit weight of the material, considered to be 120 lb per cubic foot. This gave 1,680 lb per square foot. Live load, based on Cooper's E-72 loading, was figured at 750 lb per square foot. Thus the combined dead load and live load came to 2,430 lb per square foot.

According to the newly developed design formula, the ring compression (C) is obtained by multiplying the unit load or pressure (P) by the radius of the structure, in this case 19/2 or 9.5 ft. Then C=2,430 x 9.5, or 23,085 lb per foot.

This is the compressive force acting on 1 ft of the steel shell. For one-gage steel plate under 14 ft of cover, experimental data reveal an ultimate strength of 144,000 lb per foot. Thus, the factor of safety for the L&N structure, assuming the use of one-gage steel plate, is more than six.

In constructing the giant culvert the first step, after the line and grade had been established, was to complete one end of the structure while three rows of bottom plates were being laid the full 100 ft. The contractor, the R. C. Burr Company, Walton, Ky., then built a simple scaffold inside the end ring to allow men to work at the top. As each ring was completed the scaffold was moved forward.

Closely supervised backfilling eliminated the need for strutting. Repeated measurements were taken at various stages of backfilling to make certain the fill was adequately and properly compacted. Approximately 1,600 yards of bank-run gravel was delivered in railroad cars and dumped through the openings of the bridge to be replaced by the culvert. A Caterpillar 955 Traxcavator distributed the gravel.

In compacting the material, pneu-

(*Continued on page 29*)

Install headed roof bolts in four simple steps

1 **DRILL THE HOLE** to required depth and diameter with rock drill. Maximum strength is obtained when the hole is drilled perpendicular to the roof surface.

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3 **TIGHTEN THE ASSEMBLY** with an impact wrench to complete the installation. When tightened in the hole the leaves of Bethlehem's Type "C" expansion shell expand in four directions to lock the bolt securely in place.

4 **TEST THE INSTALLATION** to assure the accuracy of equipment and bolting crews. Tension testing may be performed at regular intervals. Bethlehem engineers are available to work with your crews on any aspect of the job.

BETHLEHEM STEEL

BETHLEHEM STEEL

Flair for showmanship enlivens special Burlington excursions. Passenger agents (above), doubled as guides for "Autumn Panorama" tour which included lunch at University of Colorado (below). Four such trips attracted 2,500 patrons.

How 'Q' Boosts Passenger Income

► **The Story at a Glance: The Burlington last year chalked up a record high post-war passenger revenue figure of $21.5 million. Intensified promotion of the "romance, glamour and prestige" of rail travel has paid off handsomely for the Burlington, as well as other railroads, in increased patronage, profits and morale.**

The Burlington has found that it pays to cater to passengers. With the help of $1,500,000 added receipts derived from "created traffic," CB&Q passenger revenues in 1960 hit a post-war peak of over $21,500,000.

CB&Q President Harry C. Murphy says his railroad's formula for success is a "blend of salesmanship and close control of costs coupled with genuine enthusiasm for the passenger business."

Burlington's general passenger traffic manager, W. F. Burke, enthusiastically explains: "You've got to go out and look for business. And you've got to offer travel that has appeal. We have consistently advertised our passenger service and I'll match our dining

car menus and prices with good restaurant meals anywhere. Most importantly, we truly want passengers to think well of us."

A mailing list of 21,000 satisfied excursionists who keep coming back for more, offers proof that passengers think well of the Burlington.

H. C. Wallace, second in command of CB&Q's passenger department, was convinced he could sell, and make a profit from, an off-season, week-end excursion to the Colorado Rockies. The resulting "Autumn Panorama" trip was sold out almost as soon as it was announced and 400 applicants had to be turned down. Passengers making the trip liked the attention they received as well as the Burlington brand of showmanship that enlivened the travel package. The tourists were given a musical sendoff at Chicago's Union Station by a "name" band hired to accompany the tour (see cover photograph). Burlington passenger agents doubled as tour guides. Each was outfitted in authentic western togs complete with ten-gallon hats. The train included a recreation car decorated in Gay Nineties motif. A free early morning cup of coffee was available for everyone. Four of these off-season excursions attracted 2,500 riders and added over $71,000 to last year's record revenues.

Burlington's creative passenger sales efforts started in 1952 when it sold to 2,500 small-town students overnight educational trips to such principal Burlington cities as Chicago, Denver and Omaha. The road's promotion emphasis, said Mr. Burke, "shifted from the old safety, economy and comfort theme to stress, instead, that rail travel offers romance, glamour and prestige." Last year 62,000 students enjoyed these chaperoned, overnight rail pilgrimages that have become a major event of the year in many western communities.

Keeping its passenger sales force keyed to a high competitive pitch has brought benefits other than financial to the Burlington. "Increasing our passenger revenues this year in the face of a general decline in common-carrier passenger business—and business in general—has done wonders for the morale of our sales force," Mr. Burke said. "This is, understandably, an important intangible, and necessary to our continued success."

Cost consciousness, an important factor in Burlington's success formula, is "absolutely essential." According to Mr. Burke: "It's quite possible to sell an extra train and end up losing money. An ideal situation is to be able to add extra cars to a regular train."

Last year, special incentive fares between maior Burlington cities produced $48,000 in extra revenue for regularly scheduled trains.

"MOON OVER MIAMI" vacation excursions added considerable to Illinois Central passenger revenues. First trip, last June, attracted 546 paying customers.

The biggest portion of group business on the Burlington last year came from moving 27,000 Boy Scouts to and from Colorado Springs. The movement produced $500,000 in added revenue. CB&Q took 3,756 Shriners to a convention in Denver, grossed $165,462 on the move. A dozen steam-powered excursions, plus a final, pre-museum run of the "Pioneer Zephyr," America's first diesel-powered, streamlined train, added another $48,500 to the year's record revenues. Thousands of mid-westerners paid another $29,652 for week-end tours from Chicago to historic Nauvoo and Galena, on the Mississippi River. Nine football specials added another $30,000.

Other railroads, too, are finding that "created traffic" can trim passenger deficits. Illinois Central reports that organized tours attracted 24,000 passengers and contributed $175,000 to passenger revenues during 1960. On one rail-fan trip last October, IC passenger agents in Louisville, swamped with advance ticket requests, ordered two extra coaches added to the train.

On the Erie-Lackawanna, passenger sales personnel met in New York recently to plan a hard-hitting campaign to sell more passenger service. Emphasizing E-L's slogan, "The Friendly Service Route," the passenger sales force will stress service to conventions, organized tour groups, steamship travelers, packaged vacations to areas beyond Erie-Lackawanna lines, and holiday and tourist travel to vacation resorts, metropolitan centers and scenic areas on E-L lines.

Missouri Pacific's continuing promotion activity has increased its passenger revenues. MP's passenger train revenue per train-mile for the first half of 1960 showed a 14.2% increase over first-half 1959 results. During the same period, patronage increased 1.7% and passenger revenue went up 4%.

"Travel Tray" meals, available for coach passengers who wish to be served in their seats, add nearly $8,000 a month to revenues on MP's "Eagle" trains. Other fringe benefits offered to MP travelers are reduced dining car prices, low cost "Chef Suggestion" meals, eighty-five-cent Jumbo Hamburgers and "Silver Skillet" breakfasts at $1.50. On daylight runs, free coffee is served at 10 a.m. and 3 p.m. to all passengers on trains with dining cars. Since June 1958, some 44,000 passengers used MP's Thrift-T Sleeper service between St. Louis and Colorado paying a scaled-down charge in addition to a regular coach ticket. During the summer season, these cars have been 100% occupied trip after trip. Through last October they had produced over $217,000 in Pullman revenue.

In connection with the B&O, the MP has operated Slumbercoach service between San Antonio, Washington, D.C., and Baltimore since October 1959. Through July 1960, revenues of $92,807 were derived from 16,312 passengers carried in the cars.

Keeping equipment in first-class shape, unrestricted use of family plan fares for departure on any day of the week, and reduced fare incentives for group travel are other MP extras attracting created traffic.

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RESUME

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Profitez de cette occasion unique pour augmenter la distribution mondiale de vos produits. Réservez dès maintenant votre espace publicitaire pour 1961. (La date de clôture pour le numéro de mars est le 1 février).

RESUMEE

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(Inserate für die Märznummer müssen vor dem. 1. Februar eingesandt werden).

RESUMEN

Nueva oportunidad ofrecida a los abastecedores ferroviarios para vender en el mercado internacional. Ahora cada anuncio puede llegar a 10,000 dirigentes ferroviarios en todo el mundo... y de un modo económico y eficiente, en *una sola* revista. International Railway Journal es leída prácticamente por todos los grupos ferroviarios de más de 50 países. IRJ es una revista internacional *autónoma* (no una edición extranjera de alguna revista norteamericana) que se publica en inglés con resúmenes en español (como éste), francés y alemán. Aproveche esta excepcional oportunidad para aumentar la distribución mundial de sus productos para ferrocarriles. Reserve espacio para su anuncio en 1961, pero hágalo sin demora. Las reservaciones para el número de marzo se cierran el primero de febrero.

INTERNATIONAL RAILWAY JOURNAL

L&N's METAL CULVERT

(*Continued from page 23*)

matic hand tampers were used close to the pipe, and an R-100 Wacker Rammer with a 10-in. pad compacted the fill for several feet from the edge of the pipe. Additional compaction was obtained with crawler tractors.

Excavation for the line change amounted to approximately 160,000 cu. yd. of shale, all of which had to be blasted. Hauling equipment consisted of tractor-drawn pans. This equipment, which furnished adequate compaction of the shale, operated over the pipe with only about 2 ft of cover. Despite these heavy live loads over a minimum of cover, no permanent deflection is said to have resulted. Attention is called to this fact as a visible demonstration of the benefits to be derived from proper compaction.

Installation of this large-diameter culvert is said to have generated a substantial amount of interest, with the result that engineers from many agencies in a number of states have visited the construction site to view the techniques employed during the installation work.

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DOYLE ASKS CHANGES (*Continued from page 10*)

port, include this: "In cases involving inter-mode competition, pricing below the full cost by one mode which forces carriers of other modes to price below fully-distributed costs shall be presumed to be unfair unless it can be demonstrated that such prices are not below long-run marginal costs."

Here there is a recommendation that Congress set up and finance a study to develop a continuing cost-analysis program. Another recommendation is that anti-umbrella provisions of the Interstate Commerce Act's Section 15a(3), which is the rate-freedom section added by the 1958 Transportation Act, be eased to make them say that no carrier shall be required to price its service "above cost of production plus a fair return" in order to protect the traffic of another carrier.

The study group seems to think the ICC has never figured out what Section 15a(3) means. "Members of the Commission," the report says, "seem to be puzzled, except to agree that Congress must have meant to make some kind of drastic change."

Another of the group's assignments called for a determination of the kind and amount of railroad passenger service necessary to serve the public interest and national defense.

The answer, from the public-interest standpoint, is that railroad intercity passenger service "meets no important public need that cannot be provided for by other carriers and possesses no uniquely necessary service advantages." The report goes on to say there is thus no need for an intercity rail service which cannot continue without subsidy.

As to national defense, the report says responsible federal agencies offered no advice on defense needs for railroad passenger service. If there is a defense need, it should be made known as early as possible.

It goes on to suggest that there may well be substantial demand for railroad passenger service within the developing urban regions 10 years hence. "It is not clear," the report warns, "whether service could be reconstituted at that time unless preserved throughout the period, but it would appear doubtful."

After recommending that ICC authority to authorize abandonment of train service be continued, the report proceeds to consider what might be done about passenger service. There it says:

"Railroad management has now received much free consultation on this subject, and we believe the next step is for the responsible railroad leaders to attempt an industry-wide determination of the future of this passenger business . . . The business is truly at the crossroads and management's minimum responsibility at this time is to give top-level industry attention to determining a course of action."

If the passenger service can't be revitalized in its present setting, a National Railroad Passenger Service Corp. should be considered, the report continues. Such a corporation would have "complete control" of the marketing and producing of passenger service.

To aid in solving the commuter-service problem, the report recommends an "attractive" federal loan program to stimulate the acquisition of new equipment by the railroads. It also calls for management action to take advantage of the loans and "continued state and local willingness to share operating deficits."

For the "national freight car problem," the report prescribes a Congressional study which should "explore in depth the concept of a national car pool, including . . . application of pooling to standardized containers for intra-modal and inter-modal interchange."

A government-sponsored National Freight Car Corporation would be a "possible approach to car pooling," the report suggests. It goes on to say that the federal government might well be the initial owner of 51% of the corporation's stock, which, "after the initial period, should be sold as rapidly as the market would permit." Then, the government "should withdraw from the corporate management."

As to piggybacking and containerization, the report says the ICC should make full use of its powers to foster the development. It adds that Congress should indicate its desire for that approach by expressing its intention that rapid interpretation of the Interstate Commerce Act "should not operate to bar progress." Meanwhile, it is also proposed, standardization of piggyback equipment and containers should be promoted by the proposed Department of Transportation.

As to the so-called agricultural exemptions, which leave motor transportation of farm products free of regulation, the study proposes a gradual roll-back to the point where they would apply only to that for-hire transportation which moves the exempt commodities from their point of production to the first point of unloading or transfer. As to the bulk-commodity exemption, the report recommends its repeal and substitution of mild regulation under which water carriers of commodities in bulk would be required to obtain licenses as contract carriers and file their minimum rates.

Other recommendations in the report include calls for tax relief for railroads, creation by Congress of a joint Senate-House Committee on Transportation to carry on continuous studies with a view to submitting recommendations to appropriate standing committees; creation of a Transportation Circuit Court of Appeals with exclusive appellate jurisdiction to review decisions of regulatory agencies; a sharpened definition of private carriage and a requirement for federal registration of interstate private carriers; and a critical examination by Congress of the Railway Labor Act for "possible revision."

The report gives a negative answer to the question of whether or not the country is headed for "another major transportation crisis." The study group found "critical spots" and "serious problems," but "no general crisis in the domestic transportation system." Nevertheless, it found trends which "give cause for concern for the health, if not the very existence, of common carriers."

The railroad industry's relative losses do not indicate to the group that the industry is in a crisis. Shortly after making that finding, however, the report discusses economic results of the decline of common carriers and sounds this warning:

"We frankly face a shift from a private public carrier based transport system to a private and exempt carrier based system along with the prospect of a government-owned railroad industry."

Additional Roads Adopt Standard RR Wrist Watches

The standard railroad wrist watch, introduced by the Elgin National Watch Company last year, is gaining in popularity. Elgin recently announced approval of the wrist watch by M-K-T, NYC and Frisco. The watch was first adopted officially by the P&LE last June (RA, June 27, 1960, p. 9).

An Elgin spokesman said that new watches have been supplied to nearly every Class I railroad in the country for testing and that Great Northern has completed testing and is expected to adopt the wrist watch as a standard timepiece for its employees. The spokesman added that rail brotherhoods are also seeking official sanction of a standard railroad wrist watch.

MARKET OUTLOOK *at a glance*

Carloadings

Loadings of revenue freight in the week ended Dec. 31 were not available as this issue went to press.

Loadings of revenue freight for the week ended Dec. 24 totaled 467,978 cars; the summary, compiled by the Car Service Division, AAR, follows:

REVENUE FREIGHT CARLOADINGS
For the week ended Saturday, Dec. 24

District	1960	1959	1958
Eastern	68,508	73,209	68,331
Allegheny	72,198	95,107	75,848
Pocahontas	39,882	37,743	32,559
Southern	94,117	85,169	78,749
Northwestern	50,695	50,768	48,988
Central Western	100,948	90,692	91,587
Southwestern	41,630	36,201	36,086
Total Western Districts	193,273	177,661	176,661
Total All Roads	467,978	468,889	432,148
Commodities:			
Grain and grain products	43,151	34,091	43,320
Livestock	3,220	2,775	2,864
Coal	99,089	91,329	89,402
Coke	4,707	10,311	7,826
Forest Products	27,943	30,794	24,696
Ore	12,063	20,112	11,964
Merchandise l.c.l.	27,206	29,129	31,966
Miscellaneous	250,594	250,348	220,110
Dec. 24	467,978	468,889	432,148
Dec. 17	486,059	615,333	571,147
Dec. 10	517,653	642,865	589,353
Dec. 3	522,936	649,582	594,884
Nov. 26	471,400	574,229	539,489
Cumulative total, 51 weeks	30,033,263	30,530,692	29 753,926

PIGGYBACK CARLOADINGS.—U. S. piggyback loadings for the week ended Dec. 24 totaled 9,544 cars, compared with 6,284 for the corresponding 1959 week. Loadings for 1960 up to Dec. 24 totaled 546,067 cars, compared with 409,838 for the corresponding period of 1959.

IN CANADA.—Carloadings for the seven-day period ended Dec. 21 totaled 59,938 cars, compared with 60,080 for the previous seven-day period, according to the Dominion Bureau of Statistics.

	Revenue Cars Loaded	Total Cars Rec'd From Connections
Totals for Canada		
Dec. 21, 1960	59,939	23,031
Dec. 21, 1959	64,507	28,759
Cumulative Totals		
Dec. 21, 1960	3,567,766	1,351,991
Dec. 21, 1959	3,775,606	1,378,825

New Equipment

FREIGHT-TRAIN CARS

► *Louisville & Nashville.*—Will spend about $36 million for equipment in 1961. Company has ordered 900 70-ton hopper cars and 900 70-ton gondolas from Pullman-Standard (RA, Nov. 28, 1960, p. 79). In addition, 1,000 cars will be rebuilt at Louisville shops and "order of additional new cars is anticipated."

Capital Improvements

► *Chicago Transit Authority.*—Capital budget of $25,720,000 for 1961 plant improvements includes expenditures for elevation of Lake Street rapid transit route and construction of new yard and inspection shop; construction of terminal facilities, transportation office and inspection shop for Congress rapid transit route (Forest Park); major track and signal work at four locations; expansion of 63rd-Loomis yard, power distribution and station facilities; remodeling of two L stations; provision of additional customer parking facilities at two locations; improvement of bus-rapid transit passenger interchange facilities at two stations.

► *Louisville & Nashville.*—Will spend approximately $9 million in 1961 for improvements to fixed property. Major projects include continuation of work on enlargement of hump yard at DeCoursey, Ky.; installation of additional welded rail; modifications and improvements to locomotive and car repair facilities; installation of additional hotbox detectors, continued study of simplified methods and procedures in accounting and conversion of other manual methods to machine operations.

Purchases & Inventories

► *Nine Months' Purchases Up 3.7%.*—Purchases by domestic railroads of fuel, material and supplies in this year's first nine months were $41,797,000, or 3.7%, higher than in the comparable 1959 period. Purchase and inventory estimates in following tables were prepared by Railway Age.

*PURCHASES**	*September 1960 (000)*	*Nine Months 1960 (000)*	*Nine Months 1959 (000)*
Rail	$ 2,798	$ 50,879	$ 54,682
Crossties	4,642	48,751	33,681
Other Material	74,023	801,245	731,440
Fuel	24,949	258,204	297,479
Total	$106,412	$1,159,079	$1,117,282

* Subject to revision.

INVENTORIES†*	*September 1, 1960 (000)*	*September 1, 1959 (000)*
Rail	$ 57,459	$ 53,250
Crossties	76,723	68,552
Other Material	414,000	421,167
Scrap	24,405	24,974
Fuel	23,474	21,767
Total	$596,071	$594,710

* Subject to revision.
† All total inventory figures taken from ICC statement M-125 for month indicated.

E-L Rail-Highway Jeeps Fight Snow Delays

Erie-Lackawanna maintenance-of-way forces are using 23 newly delivered Jeeps for snow-removal work both on and off the railroad tracks. The four-wheel drive Jeep pick-ups are equipped with flanged wheels, radio communications and snow-plow attachments. The seven-ft snow blades are adjustable to suit job conditions. Tools and supplies can be transported in the pick-up body, and the plow blade can be used for leveling earth or moving sand or ballast during the summer months, according to L. H. Jentoft, assistant chief engineer in charge of maintenance of way. The Jeeps are being distributed to track supervisors at several key points where snow may become a major problem.

GN Files to Support ATSF on WP

Great Northern wants to be among those present and participating when the ICC delves into the problem of what's to become of the Western Pacific.

For now, at least, GN is confining its activity to appearing in support of Santa Fe's application for authority to acquire control of WP and in opposition to Southern Pacific's conflicting application. But, Great Northern adds, changing circumstances could lead it to seek a share of control of WP or to ask authority to purchase (or acquire trackage rights over) WP's line between Bieber, Calif., and Oakland-San Francisco.

Great Northern is rising to the defense of its interests in the GN-WP "Inside Gateway"—the line built by the two roads in the 1930's between Keddie, Calif., and Klamath Falls, Ore., to provide a new rail link between the Pacific Northwest and the state of California.

Like SP and Santa Fe, GN has backed its interest in WP's future with substantial purchases of Western Pacific common stock—156,100 shares, or about 10% of the outstanding common, as of Dec. 28, 1960. (GN's stock acquisition means that at least 40% of WP's common is now held by three railroads—about 10% each by GN and a Southern Pacific subsidiary and approximately 20% by an ATSF subsidiary, according to available figures.)

Unlike SP and Santa Fe, however, Great Northern isn't filing a control application. Instead, GN is petitioning for leave to intervene in opposition to Southern Pacific's pending control application and in support of Santa Fe's application.

Still, GN isn't shutting itself off completely from the opportunity to come in later with its own bid. Changed circumstances, caused either by the intervention of other roads or by the filing of new control applications could result in GN's petitioning "to seek authority to acquire control of Western Pacific jointly with other carriers or to acquire, on fair and reasonable terms, ownership of or trackage rights over that portion of Western Pacific's main line of railroad extending from Bieber to Oakland and San Francisco."

Most of the emphasis in GN's petitions to the ICC is placed on preservation of the Inside Gateway—a route in which GN now has a net investment of more than $7 million.

For many years, Great Northern points out, it and WP have provided "aggressive, efficient and competitive service" over the line, and Santa Fe has cooperated in "maintaining the character of service" on traffic moving to and from ATSF territory via the Bieber route.

In the event of acquisition of control of WP by any other carrier, GN declares, "the public interest, including the interest of Great Northern and shippers via the Great Northern, requires as a minimum that consummation of the transaction be subject to the standard conditions imposed" with the object of keeping open and preserving existing routes, channels of trade and gateways.

SP Acquisition Effects Feared

But, Great Northern adds, "should Southern Pacific, the owner and operator of the only alternate north-south rail service route, be the carrier which gains control of Western Pacific these conditions would not be sufficient to protect the public interest. Acquisition of Western Pacific by Southern Pacific would have these inevitable effects: It would leave Southern Pacific in control not only of its present long-haul routes between the northern Pacific coast and California but also in control of the only other competitive rail service route between said territories. (And) with respect to all traffic moving via the Inside Gateway, such acquisition would replace the present aggressive Western Pacific-Great Northern service with service controlled by Southern Pacific, competitive primarily with the existing Southern Pacific service routes which afford that carrier the long haul. Such effects would be detrimental to the Great Northern and contrary to the best interest of the shipping public."

In contrast, GN concludes, control of WP by Santa Fe "would not only provide strong incentives for continuation of the present character of service provided by an independent Western Pacific, but would afford an opportunity for improving that service by permitting the effectuation of economies and efficiencies in rail transportation and by preserving and fostering established competitive rail routes and gateways."

What Are Big RR Questions?

In the near future, this department will have questions on "Measuring Total Transit Time" and the possible use of "Passenger Stations for Piggyback Terminals." We need to hear from our readers, though, about other topics they are most interested in.

One reader, for example, suggests a discussion of how a railroad goes about establishing a succesful incentive system. He feels that a well-organized suggestion system could benefit from talent and ability of railroad employees, which is not always tapped for company benefit. The incentive, he says, would not necesarily have to be monetary, if the employee got deserved recognition for the merit of his suggestion. A lot of railroads now have useful suggestion systems. Do these, perhaps, need to be improved? What do you think?

Send your questions in—and let us have also your comments on questions other railroaders raise. If you have a problem that you think should be widely discussed, send it in. It could be someone else has the same problem and has come up with an answer.

A forum for railroaders who want to explore questions of importance to their industry, this department welcomes both questions and answers from readers at all levels of responsibility in the industry and associated fields. We'll pay $10 to any reader submitting a question that forms the basis for a column discussion. Address correspondence to Question and Answer Editor, Railway Age, 30 Church St., New York 7, N.Y.

Why Not Automatic Weighing?

To the Question and Answer Editor:

Referring to the Sept. 26 issue, page 48, in which Elmer A. Duncan, transportation department, Baltimore & Ohio, is asking about automatic weighing of freight cars.

For many years the Great Northern has been weighing iron ore cars automatically over a scale while the train is in motion. This, of course, is a one-commodity operation, but it works well. Complete ore trains are pushed over the hump where the automatic scale is located. Cars pass over the scale at the rate of approximately three per minute. We thereby get the gross weight of each car. The computer built into the scale automatically deducts the tare weight, giving us immediate information as to the net weight of each car. The cars are then cut by grades of ore to the various classification tracks by gravity. Possibly such a weighing system could be used by railroads hauling coal in quantity.

Mr. Duncan says it would be advantageous to weigh the car while it is being loaded; and when the car is completely loaded, the total weight would be known. I believe that such a car would be on a single scale, and the cars would have to be loaded one at a time, whereas iron ore is loaded simultaneously into a number of cars—either by conveyor belts or large capacity shovels—and the weights ascertained later as the cars go over the automatic scale.—*H. B. Nordstrom, director of purchases, Great Northern.*

One Agency for All Passenger Service?

To the Question and Answer Editor:

When 90%, or so, of the average railroad's revenue comes from freight, it is difficult for any line (except the Long Island) to be unbiasedly "passenger minded." It is with this in mind that I propose that all the nation's railroads turn over their passenger, head end and commuter business to a single organization, to be known as the U. S. Passenger Railroad (or some such title). The advantages would be:

All purchases could be standardized, thus cutting costs. Equipment would be purchased on a regional basis, many units at a time at a lower unit price. For example, all coaches operating on two-night runs would be uniform 44-seaters, readily poolable. While electric suburban operation would present some problem, at least standardized mass production could be utilized by a single body style (such as the Budd Company's Pioneer III).

Another advantage would be that the combined revenues of the USPRR would then be able to wage an all-out advertising campaign for business, hitting the public through the press and magazines and also travel agencies.

A single passenger organization would enable use of a simplified ticket stock, which could, therefore, make every travel agent a railroad agent.

Once the passenger train is divorced from the freight and the consistent myth of "huge freight profits," then governmental fair play could be more easily bargained for. For example, when cities and towns want passenger service, but such service loses money, it would be easier for the USPRR to "contract" for the service than for the individual railroad (with its "profitable" freight service).

The operation would be along the lines of the Railway Express Agency. However, the USPRR would operate as it saw a need for service. Forgetting the old unwritten laws of competitive operation, the USPRR would aim at the most profitable route with the greatest potential.

Operation of this sort would call for a clean break with the past.—*William R. Wright, Cranford, N.J.*

[*An organization somewhat like that proposed by Mr. Wright is one of the items given consideration in the just released report of the transportation study of the Senate Committee on Interstate and Foreign Commerce* (*See p. 7.*)*—Editor*].

People in the News

Alexander F. Cummings
D&H

C. N. Wiggins
L&N

Carl A. Love
L&N

J. R. Douglass
L&N

R. G. Flannery
NYC

V. Henry McLean
PRR

Buford W. Tyler
PRR

J. A. Barrett
Wabash

J. J. LaMonica
Wabash

Thomas G. Lanphier, Jr.
Fairbanks, Morse

BESSEMER & LAKE ERIE—UNION.—**John A. Burnett,** purchasing agent, Pittsburgh, Pa., promoted to director of purchases and stores. **Leslie K. Gress,** assistant purchasing agent, promoted to purchasing agent.

BIRMINGHAM SOUTHERN.—**Elliott M. Hughes** senior supervisor of personnel, **Elgin, Joliet & Eastern,** Chicago, named general superintendent of the BS at Fairfield, Ala.

CANADIAN NATIONAL.—The following appointments on the Great Lakes Region, Toronto, Ont., became effective Jan. 1.: **W. C. Bowra,** general manager; **W. C. Hymus,** special assistant to vice president; **H. F. Lorriman,** comptroller; **R. H. Menary,** employee relations officer; **John C. Noel,** public relations manager; **D. F. Mills,** analytical services officer; **J. D. Gordon,** office manager; **E. R. Dalrymple,** regional freight sales manager; **M. E. Doke,** regional passenger sales manager; **W. E. Griffiths,** regional chief engineer; **W. E. Tate,** general superintendent transportation.

Douglas V. Gonder, vice president, Atlantic Region, will become responsible for the marketing as well as the operation of rail transportation services and all necessary supporting activities. **D. V. Lacombe,** regional public relations manager, will report to Mr. Gonder, instead of to the president. Also reporting to Mr. Gonder will be: **John W. Demcoe,** general manager; **G. Homer Betz,** former regional auditor, now named comptroller; **George A. Blakney,** employee relations officer; **Charles T. Rideout,** former staff supervisor—motive power and car equipment, now named office manager; **Fabian M. Kennedy,** work study co-ordinator; **Robert B. Thomas,** manager, industrial development; and **J. Howard Easton,** former assistant analytical services officer, now promoted to analytical services officer. **W. H. Collins,** freight traffic manager, Moncton, named freight sales manager. **George Stiven,** passenger traffic manager, appointed passenger sales manager. **Harold H. Hicks,** general superintendent motive power and car equipment, named general superintendent equipment.

Alfred Skinner, superintendent of CN Express, Edmonton, Alta., appointed area manager in Saskatchewan, Prairie Region, and **W. G. Bryant,** Prince Albert division superintendent, named area operations manager in Saskatchewan. **E. S. Barker,** superintendent, Calgary, Alta., appointed area manager in northern Manitoba and northeastern Saskatchewan, Prairie Region, with headquarters at Dauphin, Man.

Clifford H. Sparks, assistant regional manager of real estate, Moncton, appointed project co-ordinator to supervise and co-ordinate all phases of the new Moncton Main Street Development.

Toronto Area appointments, Toronto, Ont.: **J. H. Spicer,** area manager; **C. F. Armstrong,** assistant area manager; **J. J. Campbell,** superintendent transportation; **R. G. Moffatt,** area engineer; **R. M. Veenis,** superintendent equipment; **E. G. Johnston,** freight sales manager; **R. Simmons,** passenger sales manager; **C. E. Shaver,** operations manager.

London Area appointments, London, Ont.: **C. J. Morris,** area manager; **S. S. Wier,** assistant area manager; **W. J. Rupert,** superintendent transportation; **W. J. Wanamaker,** area engineer; **R. J. Crux,** superintendent equipment; **C. Hill,** freight sales manager; **E. H. R. Eastwood,** passenger sales manager; **H. T. Walton,** operations manager.

Northern Ontario Area appointments, Capreol, Ont.: **G. H. Bloomfield,** area manager; **E. H. Cameron,** sales manager; **C. E. Sanschagrin,** operations manager; **R. L. Gray,** area engineer; **R. Babb,** superintendent equipment; **A. W. Jackson,** transportation officer.

St. Lawrence Region, **J. E. Gauthier,** general superintendent, Quebec district, appointed manager, Quebec Area, Quebec, Que., with additional responsibilities for area freight and passenger sales.

D. O. McGrath, labor relations assistant, appointed employee relations officer, transportation and maintenance department, Montreal, effective Dec. 1, 1960. **Neil L. Eckel** appointed transportation assistant, Montreal, with responsibility for co-ordinating all matters pertaining to operating rules on system lines. Position of system rules supervisor abolished.

Gordon M. Newby, general freight agent (sales), CNR-Grand Trunk, Chicago, transferred to Detroit.

CENTRAL OF GEORGIA.—**Terah J. Stewart,** passenger traffic manager, Savannah, Ga., retired Dec. 31, and that position abolished. **J. T. Perkins** appointed general passenger agent, Savannah.

DELAWARE & HUDSON.—**Alexander F. Cummings,** assistant manager of purchases, Albany, N.Y., named manager of purchases and stores, succeeding his brother, **Raymond D. Cummings,** retired.

LEHIGH & NEW ENGLAND.—On Dec. 19, 1960, the principal office of the L&NE in Bethlehem, Pa., was moved from the Anthracite Building to the Dodson Building, 528 North New Street, and the following will have their offices at the new address: **S. T. W. Green,** president and treasurer; **W. L. Mitchell,** comptroller and secretary; **J. S. Mowbray,** general traffic manager; **J. S. Genther,** chief of personnel.

On Dec. 8, 1960, the office of **H. C. Tunison,** vice president and general manager, was moved from Bethlehem, Pa., to Pen Argyl, Pa.

LEHIGH VALLEY.—**Otto H. Hoffman,** general eastern passenger agent, New York, named general passenger agent, Pier 8, North River, New York, succeeding **George C. Spahn,** who retired Dec. 30.

LOUISVILLE & NASHVILLE.—**C. N. Wiggins,** chief mechanical officer, Louisville, Ky., promoted to assistant general manager. **Carl A. Love,** assistant chief mechanical officer, succeeds Mr. Wiggins. **J. R. Douglass,** assistant manager planning-production, succeeds Mr. Love.

MCKEESPORT CONNECTING.—**E. F. Sullivan,** superintendent, McKeesport, Pa., appointed general superintendent there.

MILWAUKEE.—**Walter A. Keller,** manager of the reservation bureau, Chicago, retired.

NEW YORK CENTRAL.—**R. G. Flannery,** district transportation superintendent, Southern district, Indianapolis, Ind., appointed general manager, Northern district, Detroit, Mich., succeeding **Ernest C. Johnson** (RA, Dec.

19/26, p. 50). **G. W. Birk**, assistant general manager, Southern district, Indianapolis, retired Dec. 31, 1960. **E. L. Keller**, who was appointed terminal superintendent, Frontier Yard, Buffalo, N.Y., on Dec. 1, 1960, named division superintendent, Buffalo division, effective Jan. 1.

W. A. Marx appointed assistant division engineer, Toledo division, Toledo, Ohio.

PENNSYLVANIA.—**Desmond C. Gotschall**, industrial representative, Buffalo, N.Y., transferred to Pittsburgh, Pa., succeeding **Clayton A. Gill**, who retired Nov. 30 as assistant manager, industrial development, Pittsburgh region.

V. Henry McLean, assistant regional manager, Pittsburgh region, named to the newly created position of assistant vice president—sales at New York. **Buford W. Tyler**, assistant to vice president for Ohio, at Columbus, Ohio, succeeds Mr. McLean.

TEXAS & NEW ORLEANS.—**J. E. Echols**, treasurer, Houston, Tex., retired Dec. 31.

WABASH.—**B. J. Payne**, general superintendent motive power, Decatur, Ill., named manager—motive power and car equipment there. **A. L. Veith**, assistant general superintendent motive power, appointed assistant manager—motive power and car equipment. **E. Eagleton**, car shop superintendent, named superintendent car equipment. **R. N. Foster**, assistant to general superintendent motive power, appointed mechanical engineer.

J. A. Barrett, assistant vice president-traffic, elected vice president-traffic, to succeed **A. W. Richardson**, who continues as a vice president assigned to the executive department. **J. J. LaMonica**, manager-stations-motor service, appointed general traffic manager, succeeding **G. F. Harrigan**, on leave of absence preparatory to retirement.

Supply Trade

Thomas G. Lanphier, Jr., vice president—planning, **Fairbanks Whitney Corp.**, has been elected president of **Fairbanks, Morse & Co.** He will continue to serve as a vice president of the parent company.

David W. Wallace has been elected president of the **Chicago Railway Equipment Co.**, succeeding **Samuel J. Walker**, who will serve as chairman of the board. Mr. Wallace will continue to serve as executive vice president of American Seal-Kap Corp. **Donald E. Barton** has been elected vice president—railroad equipment division. Mr. Barton, who has been associated with the company for almost 25 years, will have under his direction the research, manufacturing and sales functions for the railroad division's plants at Chicago, Ill., and Franklin, Pa. **Albert E. Salatka**, general manager of the Marion Malleable Iron Works, Marion, Ind., has been elected vice president, Marion Malleable Iron Works Division.

OBITUARY

Otto Kopp, 64, vice president-traffic, **Northern Pacific**, died Dec. 27 at his home in St. Paul, Minn.

A. Witt Hix, 67, special representative of the **New York Air Brake Co.**, Cleveland, and formerly vice president—purchases of the **Chesapeake & Ohio**, died Dec. 25.

W. A. Mather, 75, chairman of the **Canadian Pacific**, died of cancer on Jan. 2 at Winnipeg, Man.

Dr. Thurman William Van Metre, 76, professor emeritus of transportation at Columbia University, died Jan. 1 at Roosevelt Hospital, New York, after a long illness. Dr. Van Metre was one of the original members of the teaching staff at Columbia University's School of Business, where he taught for 35 years. He retired in 1949 and was named professor emeritus of transportation. Dr. Van Metre wrote numerous books on transportation, including "Trains, Tracks and Travel," the latest revision of which was published a few months ago.

Railroading After Hours with Jim Lyne

IS FLAGGING OUTMODED?—The more I see of the complete absence of a flagging rule on railroads in other parts of the world—where collisions are relatively no more frequent than they are with us—the more I wonder why this rule is retained, especially in automatic signal territory.

The European method of running trains by absolute block—staff system on single track—forestalled the installation of the flagging practice with them; and I don't see why we couldn't get along without it (in many places, anyhow) without any sacrifice of safety.

BIG CREWS—A substantial crew was needed on trains in the days when it was the duty of trainmen to make minor repairs *en route* (e.g., changing a brass or chaining up a car with a pulled-out drawbar); and when there was no protection whatever from fixed signals. I wonder if it's necessary to have the same size crew nowadays, in cases where all the heading in and out is done by a dispatcher or signal operator.

'CONVENTIONAL WISDOM'—I would be classed, probably, as a "conservative" in my political and economic beliefs. That is, I am not inclined to favor governmental provision of services that could just as well (or better) be provided by private enterprise. I see no reason why long-haul highways and inland waterways should not be sold out to private corporations, to be operated as regulated public utilities. Or, for that matter, why shouldn't the post office be a public utility—just like the phone or telegraph business? In any event, it seems to me that the burden of proof ought to be on those who want the government to provide economic services.

However conservative I may be, though, I am sure there is something to be learned from "liberal" critics of the conservative position. One of these is J.K. Galbraith, whose "Liberal Hour" and "Affluent Society" I have just read. One idea alone in the latter book is ample recompense for for the time spent in reading the book—that is, the ideas that Professor Galbraith groups under the heading of "Conventional Wisdom."

Conventional wisdom, as I get it, is a belief generally accepted as true—by everybody or by some faction—and which it is heresy to question. Most of the speeches business men (or labor union leaders) make to each other would, I suppose, fall into this category. There's nothing necessarily bad about conventional wisdom, except that it may continue to be believed after events have subtracted somewhat from its accuracy.

TRAIN PORTERS—There are, I believe, still a few train porters left (as distinguished from sleeping and parlor car porters)—but not nearly as many as there used to be. As I recall, on Western roads the provision of a train porter was pretty close to standard practice on all main-line trains, up until about the time of World War I.

Again as I recall, the primary duty of these porters was to make themselves useful to coach passengers—but they were also used, on occasion, to do some flagging. I have in mind a section of single track with automatic signals, where it was occasionally necessary to flag through a block with the signal stuck at "Stop." A light 3-wheel velocipede was kept in the baggage car for such emergencies and, when they arose, it was usually the porter who was elected to pump himself through the block ahead of the train.

You Ought To Know...

LIRR needs new help, President T. M. Goodfellow has told state and local officials in New York. At the present rate, the road's cash will be exhausted by early Spring, he said. The continuing effects of the 26-day LIRR strike followed by the 12-day shutdown of Penn Station in the PRR strike were still hurting the road, Mr. Goodfellow noted, pointing out that for October and November—the first two full months after the strikes—passenger revenue was down 12.5% and freight revenue down 21.2% below expectations.

Fleet leasing grew increasingly popular on U.S. railroads in 1960. Auto and truck fleets leased by the industry totaled 1,500 trucks and 3,000 cars. The $12 million in leasing fees was up $5.2 million over 1959 figures, with trucks registering an increase of 150% and cars of 50%.

Sale of Boston's South Station by the New Haven and New York Central to a property management firm that will lease back terminal facilities is not against the public interest, ICC says.

Soo Line plans to discontinue its daily passenger trains 62 and 63, operating between St. Paul and Duluth-Superior, on Feb. 1, according to an application filed with the ICC.

President Eisenhower's action in ending commercial operations of the Panama Line—a steamship facility of the Panama Canal Co.—drew praise from the Transportation Association of America. TAA Executive Secretary Harold F. Hammond commended the President's action as "Another of several heartening moves toward reducing government transport competition made by the present Administration."

The first DL-640, Alco's new 2,400-hp diesel-electric, has been delivered to Green Bay and Western Railroad. The new four-axle, 16-cylinder turbosupercharged locomotive is designed especially for high-speed freight service (RA, Feb. 15, 1960, p. 18).

A new through sleeping car service between Detroit and New Orleans is being inaugurated by the B&O. Cars will be exchanged with the L&N at Cincinnati. Coach passengers will continue to change cars.

Prestressed concrete ties are developing increased interest by railwaymen in foreign countries, according to the American Concrete Crosstie Corp. One inquiry about purchasing an ACC automated tie production machine was made by the USSR's Minister of Transport during his recent U.S. tour; India will send a research officer to the Tampa, Fla., plant in the near future. Other countries which have expressed interest include Japan, Egypt, Saudi Arabia, Argentina, Venezuela and Colombia.

Powdered and granular base materials used in the manufacture of cement, fertilizers, foods and chemical products are being carried in special "pressure silo" containers developed for Netherlands railways. The silo units are spherical steel tanks of 530 or 600 cu ft capacity. Unloading is accomplished by compressed air or gas at pressures up to 2.8 atmospheres, which permits pumping powdered and granular materials as if they were liquids.

A long-term development program for Argentina's transportation network is expected to be the outcome of a study slated to take approximately 15 months. The United Nations Special Fund is assisting the study with a grant of $475,000 to cover part of the foreign exchange costs involved. Lieut. Gen. Thomas B. Larkin, USA (ret.), has been named technical director.

CPR has equipped piggyback flat cars for operation in passenger train service between Vancouver and Edmonton. This makes possible second-morning delivery at either end of the run.

Property values in San Francisco's five-county Bay Rapid Transit District could be dramatically increased if the proposed transit system is built, according to BARTD Chief Engineer K. M. Hoover. Citing a joint study by BARTD and City of Berkeley engineers, Mr. Hoover said the benefits rapid transit would bring through increased accessibility plus "opportunities for redevelopment and renewal projects in conjunction with the construction of transit facilities" would have "positive, beneficial effects" on the tax base.

Two electronic "brains" and a mountain of computers and miscellaneous IBM equipment preceded Rock Island's 750 accounting department employees in a move to new quarters in the LaSalle-Polk Building in mid-town Chicago. The move from their former Hamilton Park offices took place over the New Year holidays.

PRR has started moving new autos on bi-level flat cars (12) obtained from the Trailer Train Co. The initial service operates from East St. Louis, Ill., to Baltimore.

REA Express has launched a new distribution management consulting service aimed at cutting the overall distribution costs of manufacturers of nationally sold industrial and consumer products. A team of distribution experts will "customize" REA service to the specific needs and savings potential of each shipper.

ARSA-sponsored hotel and track exhibits will be opened during Coordinated Mechanical Associations' meetings in Chicago on Sept. 11, 12 and 13, despite rumors to the contrary. ARSA members last week voted overwhelmingly in favor of holding the exhibits as previously announced (RA, Aug. 8, 1960, p. 10).

AIEE winter meeting schedule will include papers on the electrification and dieselization of Russian trains, electrification of railroads in general, Disneyland's monorail, the Senate's subway system, and a panel on railroads of Great Britain.

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An opportunity and a responsibility that seldom come to a man more than once in a lifetime confronts each member of the President's commission to study and report on railroad working rules.

This is no ordinary "emergency board," with the duty merely to find some basis for temporary compromise—thus settling some passing union-management controversy. The ordinary emergency board has an aspirin-tablet assignment, while the problem handed to the Presidential working rules commission is a complex case requiring major surgery. The job may be shirked or boggled, with disastrous consequences to both sides. Or it may be approached with skill and high purpose—in which event railroads, employees and the public will be greatly benefited. The caliber of the men named to this important task lends support to the hope that they will pursue the latter course.

Railroad men know pretty well what's involved, and we need not examine the issue in detail. Firemen, as such, are no longer needed on locomotives. The number of men actually required to do the work of a yard or train crew varies according to circumstances, but is seldom as large as the number of men conventionally assigned to these crews (by agreement or law). The miles that constitute a "day" for pay purposes date back to a time when average train speed was a third or a half what it is now.

Pressed with the need for economy—to prevent their rates from becoming disastrously high in competition with rival agencies of transportation—the railroads want to get along without superfluous "firemen" and other excess crew members; and to get more miles than they now do, in return for a "day's" wage. Other "make-work" agreements or rulings railroads would like to reduce or eliminate altogether. The unions do not publicly concede the validity of the foregoing observations, and—instead of consenting to any of the railroads' proposals—they propose a number of additional concessions, mostly of the "fringe benefit" variety.

Here is a thorny issue, requiring statesmanlike qualities on the part of all participants, if a workable solution is to be found. The temptation will be strong on the part of the union representatives not to concede any of "labor's gains." Working toward the mitigation of an adamant stand on that bastion is the full realization by responsible union officials that the railroad industry is truly in a serious competitive position, where costs have got to be held down if the continued downward drift of traffic (and jobs) is to be arrested.

Many—probably most—railroad officers feel deeply and sincerely that railroads are under no obligation whatsoever to continue to provide jobs for unneeded employees, or to pay for work not done, or unnecessary work. Indeed, they discern moral wrong in wasteful outlays, when the only way such payments can be continued is to jeopardize the railroads' supply of capital for needed renewals and improvements; and hence to jeopardize future traffic and employment.

In a parallel situation—as far as unneeded firemen are concerned—the Canadian railroads arrived at a solution based on "gradualism," whereby freight and yard firemen will be eliminated, not by wholesale dismissals, but by attrition.

The "public" members of the group are predominantly experienced negotiators in labor relations matters. As a consequence, they may be tempted to seek the usual and conventional objective in such cases, viz., the reaching of an agreement, without too much concern as to whether the agreement meets the economic requirements of the situation or not.

This latter course, if it should be followed in this case, would be just plain tragedy—because the real objective here must be the adaptation of railroads to their present highly competitive environment; and the achievement of that objective with minimum hardship to the employees involved. It would be far better for the public members to go deeply into this latter question and set forth their findings on it, even if there is some dissent, than to settle for a weak compromise which would solve no problems.

There are 15 men on this commission who have been given the rare privilege of making history for the railroads and their employees, and for America's welfare, in the form of a revived and prospering railroad industry. It's a high responsibility, and the members of the commission should know that the hopeful and confident eyes of thousands of Americans are upon them as they begin their labors.

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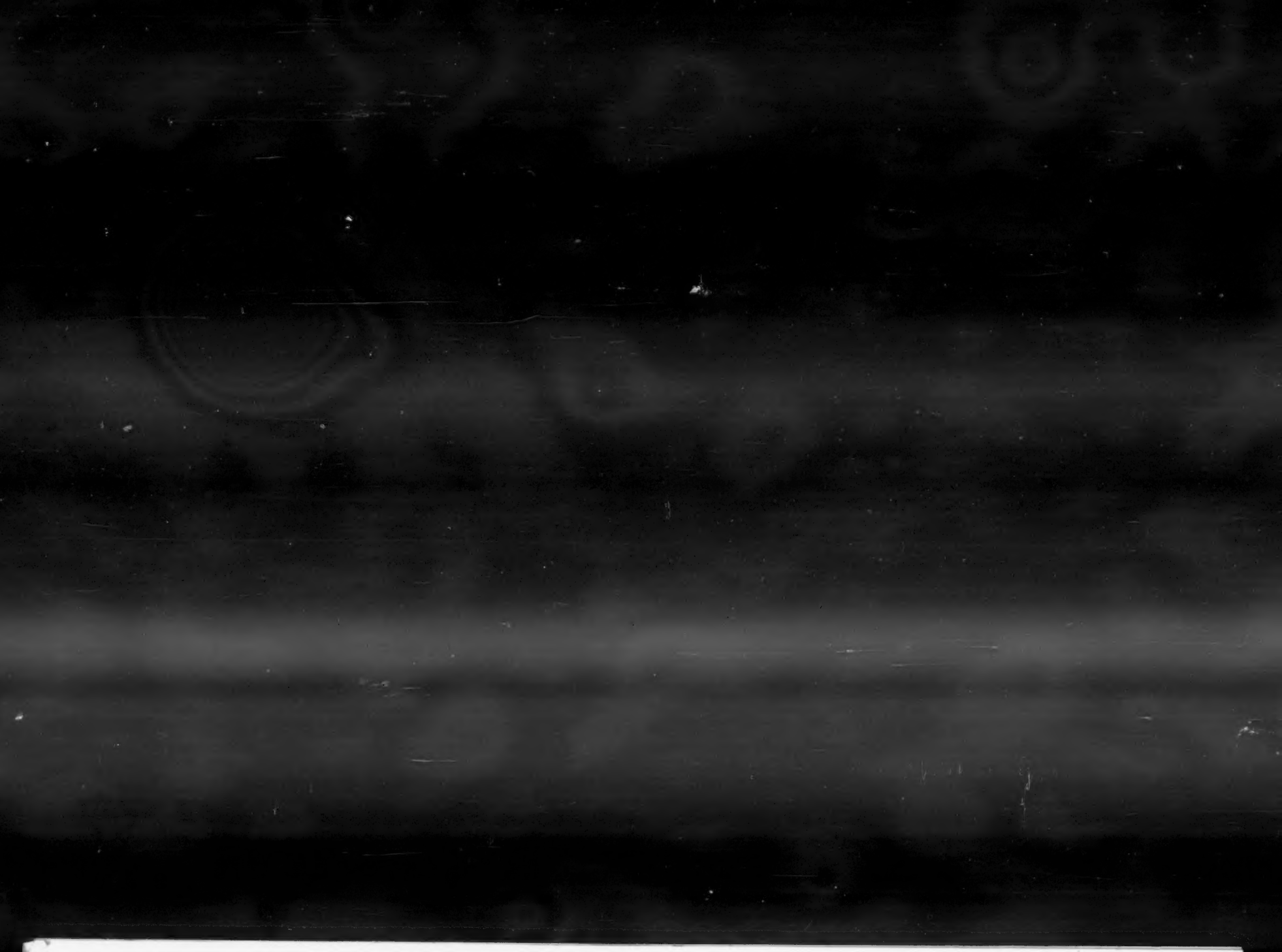
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